

**LAWRENCE TECHNOLOGICAL  
UNIVERSITY  
UNDERGRADUATE CATALOG  
2013–14**



Announcement of General Information and Courses in the Colleges of

Architecture and Design  
Arts and Sciences  
Engineering  
Management

For the Academic Year 2013–14

## **CONTENTS**

ACADEMIC CALENDAR.....	4
POSSIBLE IS EVERYTHING .....	7
YOUR CAMPUS AND COMMUNITY .....	12
SERVICES FOR STUDENTS .....	15
RETROSPECTIVE.....	34
ADMISSION TO THE UNIVERSITY .....	36
TUITION AND FEES.....	42
FINANCIAL AID .....	46
ACADEMIC REGULATIONS.....	54
POLICIES, PROCEDURES, AND REGULATIONS .....	63
DEGREES AND GRADUATION .....	94
COLLEGE OF ARCHITECTURE AND DESIGN .....	106
COLLEGE OF ARTS AND SCIENCES.....	132
COLLEGE OF ENGINEERING.....	190
COLLEGE OF MANAGEMENT .....	237
BOARD OF TRUSTEES .....	244
ADMINISTRATION .....	246
FACULTY COMMITTEES .....	249

# Lawrence Technological University

## VISIT THE CAMPUS

Lawrence Technological University welcomes prospective students, family members, employers, and others to visit. While on campus, prospective students are encouraged to discuss their educational plans with admissions staff and to meet current Lawrence Tech students, professors, or deans. Call the Office of Admissions at 800.225.5588 to arrange an appointment or to request additional information. The Office of Admissions is open (except holidays) Monday – Thursday, 8 a.m. – 7:30 p.m., and Friday, 8 a.m. – 4:30 p.m. If you plan to visit during the summer, please contact the Office of Admissions for summer hours.

Lawrence Tech's 102-acre full-service campus provides a full range of academic, recreational, and residential facilities, along with convenient access to major freeways. Southeastern Michigan is one of America's hubs of business and commerce, the site of some of the world's outstanding technological accomplishments.

## ABOUT THIS UNDERGRADUATE CATALOG

This *Undergraduate Catalog* is a compendium of opportunities available at Lawrence Technological University. It includes information on academic programs, requirements for admission and graduation, rules, regulations, and expectations. Failure to read this *Undergraduate Catalog* does not excuse students from the requirements and regulations described herein. While every effort is made to provide accurate and current information, the University reserves the right to change rules, policies, fees, curricula, courses, and other programs described to reflect faculty or administrative action. This *Undergraduate Catalog* is accurate as of the publication date. Course descriptions are available online through BannerWeb at [my.ltu.edu](http://my.ltu.edu). For information about graduate programs, refer to Lawrence Tech's *Graduate Catalog*.

## STUDENT IMAGES

Lawrence Technological University reserves the right to use images of student work and of students on campus, or at any of its offsite locations, for the purpose of promoting the University. Students not wishing to be photographed should notify the registrar in writing when they register each semester.

## Academic Calendar

### **FALL 2013 SEMESTER**

April 15 – April 19	Advance registration
April 20 – August 27	Regular registration
August 27	Last day to register for traditional semester courses without a late fee
August 28	Traditional semester courses begin; add/drop period begins; late registration fee applies
August 30	Last day of classes before Labor Day recess
September 3	Classes resume – Last day to Add/Register for a class on BannerWeb
September 4	All Adds and Registrations require Instructor and Department Chair approval
September 10	Last day to drop traditional semester courses with refund (no refund for classes dropped after September 10)
September 11	Withdrawal period begins for traditional semester courses; late transaction fee applies for each course added
September 20	Faculty Assessment Day – All day courses (starting before 4 p.m.) are canceled for the day with the exception of some studios and labs. Students enrolled in Friday studio or lab should contact their instructor to see if the session is canceled.
September 30	Last day to register for classes (regardless of when they start)
November 27	Last day to withdraw from traditional semester courses
November 27	Last day of classes before Thanksgiving break
December 2	Classes resume
December 14	Last day of traditional semester classes before final exams
December 16 – December 20	Traditional semester final exams
December 20	Fall 2013 semester ends
December 27	Grades due

### **SPRING 2014 SEMESTER**

November 18 – November 22	Advance registration
November 23 – January 12	Regular registration
January 12	Last day to register for traditional semester courses without a late fee
January 13	Traditional semester courses begin; add/drop period begins; late registration fee applies
January 19	Last day to Add/Register for a class on BannerWeb
January 20	All Adds and Registrations require Instructor and Department Chair approval
January 20	Campus closed in celebration of Martin Luther King, Jr., Day

# Lawrence Technological University

January 24	Last day to drop traditional semester courses with refund (no refund for classes dropped after January 24)
January 25	Withdrawal period begins for traditional semester courses; late transaction fee applies for each course added
March 1	Last day to register for classes (regardless of when they start)
March 8	Last day of classes before mid-semester break
March 10 – March 16	Mid-semester break
April 4	Last day to withdraw from traditional semester courses
May 3	Last day of traditional semester classes before final exams
May 5 – 9	Traditional semester final exams
May 10	Commencement
May 10	Spring 2014 semester ends
May 14	Grades due
<b>SUMMER 2014 SEMESTER</b>	
April 15 – April 19	Advance registration
April 20 – May 13	Regular registration
May 13	Last day to register for traditional semester courses without a late fee
May 14	Traditional semester courses begin; add/drop period begins; late registration fee applies
May 20	Last day to Add/Register for a class on Banner Web
May 21	All Adds and Registrations require Instructor and Department Chair approval
May 23	Last day of classes before Memorial Day
May 27	Classes resume
May 28	Last day to drop traditional semester courses with refund (no refund for classes dropped after May 28)
May 29	Withdrawal period begins for traditional semester courses; late transaction fee applies for each course added
June 30	Last day to register for classes (regardless of when they start)
July 4 – 6	Campus closed for Independence Day recess
July 9	Last day to withdraw from traditional semester courses
July 24	Summer 2014 semester ends
July 30	Grades due

## NOTES ON ALL SCHEDULES

The University reserves the right to make adjustments to the academic calendar as necessary.

For courses that start or end at times other than indicated or are of a different length, DIFFERENT dropping, adding, and refund dates apply. It is the student's responsibility to be aware of these dates. They

## **Lawrence Technological University**

are available on the website of the Office of the Registrar at [www.ltu.edu/registrar\\_office/index.asp](http://www.ltu.edu/registrar_office/index.asp) or by calling the Office of Enrollment Services at 248.204.2280.

## Possible Is Everything

Leading-edge, technology-infused academic programs. Dynamic campus life. NAIA and ACHA athletics. Proven career placement. Lawrence Technological University is for students who believe everything is possible and that possible is everything. An independent, co-educational accredited university founded in 1932, Lawrence Tech offers more than 100 academic programs at the associate, baccalaureate, master's, and doctoral degree levels. The University is composed of Colleges of Architecture and Design, Arts and Sciences, Engineering, and Management. Approximately 4,500 students are enrolled in full-time, part-time, day, evening, weekend, online, credit, and non-credit programs.

Lawrence Tech combines the benefits of a close, caring, small-college atmosphere with the academic depth and scope of a larger university. Lawrence Tech takes a personal approach to education, and the University attracts students who generally have made some big plans for themselves. They're highly motivated students with a tremendous will to succeed, to excel, and to seek out the best in whatever they do.

Lawrence Tech has a reputation for excellence. Most students claim that the University's programs are rigorous and challenging – programs that unapologetically demand commitment. At the same time, as a result of their educational preparation, Lawrence Tech graduates report (in numbers well above national norms) that they arrive in the workplace feeling prepared and ready to do their jobs.

Independent studies also confirm that Lawrence Tech students rapidly achieve placement success. Most Lawrence Tech students are employed within a month of graduating – and according to *PayScale*, the earning power of a Lawrence Tech bachelor's degree ranks in the top 7 percent of all U.S. universities.

The heritage and educational philosophy of the University is summed up in just three words in the University motto, adopted shortly after Lawrence Tech was founded in 1932 – “theory and practice.” It means that Lawrence Tech seeks to explain not only why something should work, but how it works in real situations and applications.

Much of the student's learning in this way will be gained directly from Lawrence Tech's professors. Many Lawrence Tech faculty have years of successful industrial and professional experience in addition to academic credentials from some of the nation's top universities and colleges. They've learned what succeeds in the “real” world, and they'll try to make sure that students do, too.

The University maintains close partnerships with the industries and professions that its students and graduates serve in order to provide students with the skills employers need. Lawrence Tech's proximity to some of the world's leading industrial, technological, business, and scientific enterprises also gives students the opportunity to participate in co-op, part-time jobs, and networking opportunities. More than 200 *Fortune 500* corporations have headquarters or major operations within a half-hour's drive of campus.

Lawrence Tech students are strongly encouraged to interact with the professional world throughout their academic program. Dozens of professional societies are active on campus and help students network with men and women already working in specific fields. Many of the academic programs also require participation in professional projects that seek to solve real problems facing practicing architects, engineers, managers, scientists, and others. The projects expose students to a host of real-world challenges, and Lawrence Tech students regularly earn top awards in competitions that pit them against students from other colleges and universities.

# Lawrence Technological University

## MISSION, VALUES, VISION, AND CAUSE

Lawrence Technological University was founded as an independent nonprofit institution of higher learning. On a regular basis, the University community – including trustees, administrators, staff, faculty, students, and alumni – meets to review, establish, and achieve the ambitious goals set forth in the Strategic Plan, to reflect upon hopes for the future, and to elucidate the purposes for which Lawrence Tech operates and serves. The latest edition of Lawrence Tech’s Strategic Plan can be viewed on [www.ltu.edu/strategicplan](http://www.ltu.edu/strategicplan).

Part of this planning process is to review and direct the evolution of the mission, values, vision, and cause statements that guide Lawrence Tech’s progress. These statements are:

### Mission

To develop leaders through a student-centric environment with innovative and agile programs embracing theory and practice.

### Values

Theory and Practice  
Student-focused and Caring  
Teamwork and Trust  
Character and Integrity

### Vision

To be a pre-eminent private technological university producing leaders with an entrepreneurial spirit and global view.

### Cause

The intellectual development and transformation of our students into critical thinkers, leaders, and lifelong learners.

The Lawrence Tech community believes in open, honest communication within an active learning environment that:

1. Is committed to academic excellence, diversity, and the development of the whole person.
2. Anticipates and meets the needs of our constituents: students, faculty and staff, alumni, donors, and industry neighbors.
3. Creates leadership opportunities for the growth and development of a diverse faculty and staff.
4. Links theory and practice with innovative programs and delivery.

## ACCREDITATION AND MEMBERSHIPS

Lawrence Technological University is accredited by the Higher Learning Commission and a member of the North Central Association ([www.ncahigherlearningcommission.org](http://www.ncahigherlearningcommission.org), 312.263.0456). The NCA accreditation report is on file in the University’s library and is available for public review by patrons. Various graduate and undergraduate degree programs in architecture, interior architecture, interaction design, graphic design, business administration and management, chemistry, and engineering are additionally accredited through appropriate national professional agencies.



## Lawrence Technological University

Lawrence Tech's institutional memberships include:

Advanced Acceptance Program  
American Association of Collegiate Registrars and Admissions Officers  
American Association of University Administrators  
American Council on Education  
American Library Association  
American Society for Engineering Education  
Association of American Colleges and Universities  
Association of College Administration Professionals  
Association of College Admissions Counselors (national, Michigan, and Ohio)  
Association of Collegiate Business Schools and Programs (ACBSP)  
Association of Collegiate Schools of Architecture  
Association of Fundraising Professionals  
Association of Governing Boards of Universities and Colleges  
Association of Independent Colleges and Universities of Michigan  
Association of Independent Technological Universities  
Association of Professional Researchers for Advancement  
Association to Advance Collegiate Schools of Business (AACSB)  
Automation Alley  
College Board  
Council for Advancement and Support of Education  
Council for Higher Education Accreditation  
Educational Teleconsortium of Michigan  
EDUCAUSE  
Engineering Society of Detroit  
Higher Learning Commission  
International Assembly for Collegiate Business Education (IACBE)  
Leave a Legacy Southeast Michigan  
National Academic Advising Association  
National Association of Independent Colleges and Universities  
National Association of Intercollegiate Athletics  
National Financial Aid Association  
Michigan Academy of Science, Arts and Letters  
Michigan Association for Foreign Student Affairs  
Michigan Association of Collegiate Registrars and Admissions Officers  
Michigan Campus Compact  
Michigan Community College Virtual Learning Collaborative  
Michigan Student Financial Aid Administrators  
Midwest Association of Student Financial Aid Administrators  
National Association for Foreign Student Affairs  
National Association of Student Financial Aid Administrators  
Partnership for Philanthropic Planning  
Planned Giving Roundtable of Southeast Michigan  
The Sloan Consortium

## Lawrence Technological University

Lawrence Tech is also a member of nearly all chambers of commerce in the surrounding counties of Oakland, Wayne, and Macomb, including Southfield and Greater Detroit, and the U.S. Chamber of Commerce.

Faculty and staff are additionally members of a wide variety of local, state, and national professional organizations appropriate to their disciplines. Professional organizations with active student chapters at Lawrence Tech are listed in the Services for Students section of this *Catalog*.

### **DAY, EVENING, WEEKEND, AND ONLINE CONVENIENCE**

Lawrence Tech's programs are designed for traditional students as well as for working professionals. The great majority of the University's bachelor's degree classes are offered in day and evening schedules that complement each other. Lawrence Tech is one of only a few universities to offer a complete selection of bachelor's and graduate degree programs in the evening. No stranger to providing the convenience of evening classes, Lawrence Tech pioneered some of the nation's first such programs in 1932.

A growing number of undergraduate degrees, certificates, and courses are offered online. Others are delivered in hybrid mode, meaning that some class sessions are held in the classroom while others are held online.

Undergraduate and graduate classes are usually offered on a semester calendar – two semesters of 16 weeks each. The fall semester begins in late August and ends in mid-December. The spring semester begins in January and ends in mid-May. There is also a summer session that offers students the opportunity to accelerate and continue academic progress or make up deficiencies. Certain programs may also be offered on special schedules that accelerate class meetings over shorter periods. Consult the registrar about these opportunities.

### **CLASSES AND FACULTY**

Lawrence Tech's moderate size encourages close interaction between students, faculty, and staff. Classes are generally small, especially for upperclassmen, and individual initiative is stressed.

Lawrence Tech has more than 400 full- and part-time faculty members. Exemplifying the University motto of "theory and practice," in addition to academic experience, many also bring a wealth of personal real-world research, business, or industrial experience to the classroom or laboratory. In addition to courses taught by Lawrence Tech's full-time professional faculty, it isn't unusual for students in appropriate disciplines to take classes taught by adjunct faculty who are successful corporate executives, practicing accountants, managers, entrepreneurs, engineers, architects, attorneys, and scientists. Such exposure is deliberate on the part of the University and seeks to help students develop an awareness of the most current real-world problem-solving applications of their academic studies.

Lawrence Tech students find that their professors are normally easily accessible and that they are eager to discuss individual questions, academic progress, or concerns outside of class. The University has a tradition of an "open door" policy with faculty, department chairpersons, deans, the president, and other administrative staff.

### **DIRECT STUDENT INTERACTION**

The successful Lawrence Tech student generally arrives on campus with a full measure of ability and self-initiative. Self-initiative is Lawrence Tech's term for a proper combination of motivation and self-reliance. These students appreciate the institutional position that the University exists for, and interacts with, the

## Lawrence Technological University

student – not relatives, spouses, or friends wishing to represent them. The fact that Lawrence Tech students are of a maturity that requires no such representation helps ensure that they are prepared for responsible full- or part-time employment during their academic career and, following graduation, for professional employment or continued study.

### **AFTER GRADUATION**

Lawrence Tech alumni include a distinguished group of engineers, entrepreneurs, architects, scientists, business executives, managers, technicians, attorneys, physicians, governmental officials, educators, and others holding key positions throughout the United States and around the world.

About 80 percent of Lawrence Tech's more than 30,000 degree-holding alumni reside in Michigan and the Midwest, but alumni also live in nearly every state and territory, as well as in Aruba, Australia, the Bahamas, Bermuda, Brazil, Canada, Chile, China, Colombia, Ecuador, England, France, Germany, Greece, Guyana, Hong Kong, India, Iran, Ireland, Israel, Jamaica, Japan, Jordan, Lebanon, Malaysia, Mexico, the Netherlands, Nigeria, Norway, Pakistan, Peru, Saudi Arabia, Scotland, Singapore, South Korea, Sweden, Taiwan, Thailand, United Arab Emirates, Venezuela, and Zambia.

Lawrence Tech's Alumni Association is the international forum for active graduates. The association hosts a website, [www.lawrencetech.net](http://www.lawrencetech.net), which provides access to everything from lifetime email accounts and events calendars to job search assistance. The Association holds meetings and sponsors a variety of activities and services for members in southeastern Michigan and formal and informal chapters elsewhere in Michigan and other states, including Arizona, California, Florida, and Georgia. Several chapters based on academic interest are also active. The Office of Alumni Relations coordinates alumni activities and serves as a campus liaison for alumni worldwide.

## Your Campus and Community

Lawrence Technological University's park-like 102-acre campus continues to expand and now includes 14 major buildings. An exciting program of improvements continues throughout the campus and includes the A. Alfred Taubman Student Services Center, which provides a convenient centralized student service location, meeting rooms, and more.

Lawrence Tech's location is considered by many to be among the University's greatest assets, providing many nearby opportunities for students to network with practicing professionals, participate in career-related organizations, and find internships, co-op experiences, and full- and part-time employment during college and after graduation.

Located near the exact center of population of southeastern Michigan, the University is conveniently situated in the Oakland County city of Southfield, a suburban community of more than 78,000 people. For visitors traveling by car, the campus is about 30 minutes northwest of downtown Detroit. It is also about 30 minutes northeast of Detroit Metropolitan Airport. Lawrence Tech is easily reached by highway and is situated at the intersection of West Ten Mile Road and Northwestern Highway (M-10, the Lodge Freeway), just south of Interstate 696.

The campus is at the center of the world of real work, real problems to be solved, and real possibilities for a full professional and cultural life. Southeastern Michigan is a hub of American business and industry. It is a manufacturing and corporate center, the site of some of the world's outstanding technological accomplishments, and a focal point for cultural activities and recreation.

Within a 15-mile radius of campus are world headquarters for many of the nation's leading research, industrial, and manufacturing firms. And while the area's economy is substantially more diverse than in the days when the region was dubbed the world's auto capital, fully one-third of all U.S. auto production still takes place within 70 miles of the campus – in some of the planet's most sophisticated, highly automated, and innovatively managed work environments.

Lawrence Tech is part of the Oakland County/Automation Alley SmartZone, one of the state's foremost concentrations of and magnets for high-tech business and enterprise. The University is also the designated Small Business Development Center for Oakland County, with specialization in technology.

Oakland County is one of the wealthiest counties in the nation. Retail sales in the county alone exceed those of 14 states and the District of Columbia. The county is a leading center of international commercial activity and home to some 700 foreign-owned firms from 37 countries. More than one third of Michigan's research and development facilities are located in the county, and 70 percent of southeastern Michigan's top original equipment manufacturers and suppliers are headquartered here. The county also has the third-highest number of technical workers in the nation. Nearly 60 percent of *Fortune 500* companies and more than 40 percent of *Global Fortune 500* companies have business locations in the county.

Nearby recreational opportunities abound – more than 450 lakes, five ski areas, nearly 30 public fishing sites, and more golf holes per capita than any other place in the country. Major entertainment facilities within a half-hour drive include the DTE Energy and Meadowbrook outdoor music theaters, the Palace of Auburn Hills (home of the NBA Detroit Pistons), Joe Louis Arena (home of the NHL Detroit Red Wings), Ford Field (home of the NFL Detroit Lions), and Comerica Park (home of the MLB Detroit Tigers). Additional attractions include the Cranbrook Museums, the Detroit Zoo, the Detroit Institute of Arts,

# Lawrence Technological University

Detroit Historical Museum, Motown Museum, The Henry Ford, Charles H. Wright Museum of African American History, and more.

## CAMPUS BUILDINGS

Lawrence Tech's **A. Alfred Taubman Student Services Center**, named for a former student and one of the University's most generous benefactors, is a 42,000-square-foot facility at the center of campus that provides convenient one-stop access to the Offices of Admissions and Financial Aid, the Registrar, Cashier, Dean of Students, Career Services, International Programs, Student Activities, Clinical Counseling, University Housing, Laptop Help Desk, Academic Achievement Center, and more. The building is also Leadership in Energy and Environmental Design (LEED) Silver-certified and a living laboratory of energy-efficient technologies, including a soaring atrium and vegetated "green" roof.

The **Applied Research Center** houses labs and offices for the Formula SAE, Formula Hybrid, Baja SAE, and aeronautical student teams; the transportation design program's clay modeling studio; a wind tunnel; and the Automotive Engineering Institute, which features a 4 x 4 chassis dynamometer.

The **Architecture Building**, completed in 1962, houses classrooms, studios, and faculty offices for the College of Architecture and Design. A 325-seat auditorium is also located here, as well as a gallery for changing exhibits.

The **Art and Design Center** houses College of Architecture and Design studios and computer labs and the offices of Campus Safety.

The **Wayne H. Buell Management Building** is a 115,000-square-foot structure dedicated to the memory of Lawrence Tech's third president. It houses the College of Management, library, dining commons (Real Food on Campus, [RFoC]), and bookstore. The Offices of the President, Provost, University Advancement, and Marketing and Public Affairs are also here. A fully enclosed two-story atrium hosts a variety of special events and offers a pleasant spot for students to eat, study, or visit with friends. The atrium also features an ATM and Einstein Bros. Bagels.

The **Business Services Building** houses the Department of Finance and Administration, Business Services, Human Resources, LTU Online, and e-Learning Services.

Connected to the Engineering Building is the **Center for Innovative Materials Research (CIMR)**, a state-of-the-art laboratory for the research, development, and testing of carbon-fiber composites and other advanced materials, such as ceramics and polymers for defense, homeland security, automotive, and infrastructure applications. Dedicated in 2008, CIMR was made possible by an \$11 million cooperative research agreement with the Army Research Lab and the U.S. Army Tank-Automotive Research, Development and Engineering Center – an unprecedented federal partnership with a private Michigan university.

The **Don Ridler Field House** memorializes a beloved coach and athletic director who led Lawrence Tech basketball teams of the 1940s and 1950s to national prominence and includes a 1,500-seat gymnasium, exercise track, weight and conditioning room, saunas, racquetball courts, and locker facilities.

Lawrence Tech's **Engineering Building** was the first building on the Southfield campus when it opened in 1955. Expanded in 1987, the building houses classrooms, laboratories, and offices for the College of Engineering.

## Lawrence Technological University

The **General Services Building** houses the offices of the University architect, athletic coaches, and the mailroom.

The **Professional Development Center**, built in 1959 and substantially upgraded in 1996, houses the offices and facilities for non-degree professional training and business acceleration.

The **Quadrangle** at the center of campus features crisscrossing paths, granite benches, trees, and a grassy bioswale that filters rainwater. It also caps a field of 120 geothermal wells that heat and cool the Taubman Center, which has no gas hookup.

The **Science Building**, opened in 1967, has been extensively renovated and equipped with upgraded computer, lab, and multimedia equipment. It houses classrooms, laboratories, and faculty offices for the College of Arts and Sciences – including the Departments of Natural Sciences; Mathematics and Computer Science; and Humanities, Social Sciences, and Communication. The Edward Donley Computer Center is also here. A 303-seat auditorium is located at the south end of the building.

Lawrence Tech's **University Housing-South** and **-North**, opened respectively in 1977 and 2002, provide modern, fully furnished air-conditioned apartment-style units and together house some 600 students. See the Housing section of this *Catalog* for additional information.

Lawrence Tech's **University Technology and Learning Center**, opened in 2001, is a 87,000-square-foot building housing a variety of technology labs and architecture and design studios. It also houses the University Gallery, Maibach Inter-Faith Lounge, Lear Auditorium, Denso Interactive Center, Media Services Studio, and the Provisions on Demand (P.O.D.) food kiosk. The building connects on either end to the **Architecture** and **Engineering** buildings.

**Outdoor athletic facilities** include softball diamonds and football and soccer fields.

The **Gregor S. and Elizabeth B. Affleck House**, designed by Frank Lloyd Wright and completed in 1941, was given to the University in 1978 by the late Afflecks' children, Mary Ann Lutomski and Gregor P. Affleck. The home is located in the nearby city of Bloomfield Hills. It is considered an outstanding example of Wright's Usonian work. The Affleck House is managed by the College of Architecture and Design.

## Services for Students

### ACADEMIC ACHIEVEMENT CENTER

The Academic Achievement Center (AAC) provides free academic support services to all students. Students come to the AAC to get help with homework or test preparation, compare notes, meet with study groups, or study quietly. Tutoring is provided in person and online for core classes in architecture and design, biology, chemistry, computer science, engineering, ESL, mathematics, physics, and writing. Students can walk in any day and see if a tutor is available; they can also guarantee time with a tutor by scheduling an appointment online.

Testing Services (proctored testing) are offered for students who are unable to complete quizzes or exams during regularly scheduled class time. When not in use for testing, private rooms are open for general student use.

Study skills workshops, individual study habit consultations, and study strategy handouts are available. Students can also access first-year academic support programs and Writing Proficiency exam and prep workshops. The AAC also offers computer workstations, a photocopier, other electronic resources, and conference rooms that can be reserved. The AAC is located on the lowest level of the A. Alfred Taubman Student Services Center in C201. Fall and spring semester hours of operation are Monday through Thursday, 9 a.m. – 8 p.m., and Friday, 9 a.m. – 4:30 p.m. Summer and weekend hours vary and are posted outside the entrance.

### ACADEMIC COUNSELING AND TUTORIAL SERVICES

All new students, both freshmen and transfers, are expected to attend orientation sessions prior to or during their first semester on campus. During these sessions, student opportunities, responsibilities, and regulations are presented, and registration is completed. A number of University counselors are available for academic advice, counseling, and registration assistance.

The Academic Achievement Center works with the Office of Disability Services to provide tutorial and testing services for students with disabilities. Contact the Office of Disability Services at 248.204.4100. Also see Disability Services.

### ACADEMIC SCHOLARSHIPS

A number of partial scholarship awards are available each year to on-campus students who have completed a minimum of two full-time semesters and have attained a qualifying GPA. An application is required for upper-class scholarships, and the deadline for submission is May 15 of each academic year. Students may apply at the DTE Energy One-Stop Center in the Office of Enrollment Services ([enrollment@ltu.edu](mailto:enrollment@ltu.edu) or 248.204.2280). Academic scholarship awards are made on a competitive basis at the discretion of Lawrence Tech's Scholarship Committee. The scholarship application and other information can be found at [www.ltu.edu/financial\\_aid/scholarships\\_current.asp](http://www.ltu.edu/financial_aid/scholarships_current.asp).

### ACTIVITIES AND ORGANIZATIONS

Whatever your particular interests or needs, you can find a campus activity or organization that will provide not just fun and friendships but also opportunities to hone your professional and leadership skills. Joining a campus club or organization can help you prepare for life after college or simply provide a great way to relax and recharge. As they look back on their college years, alumni often say that some of their most rewarding experiences came from their participation in co-curricular activities.

# Lawrence Technological University

So take a look at the list that follows, choose one (or several) activities and become involved! And remember to let the Office of Marketing and Public Affairs know what your organization is doing. The staff there can help with publicity and regularly reports news of campus activities to the press, radio, and television.

Students interested in forming new organizations should contact the Office of Student Engagement or the Executive Board of Student Government for assistance. Student Government approval is necessary for official recognition and funding assistance. To be eligible to run for office in any campus organization, students must have a cumulative grade point average of at least 2.3. They will be asked to withdraw from office at the end of any semester in which their semester grade point average falls below 2.0.

## Student Government

Lawrence Tech Student Government is recognized by the University administration as the official representative for the entire student body. It offers the opportunity for students to better themselves and their University through involvement in campus activities. The Student Government provides an avenue for every student to express concerns, while endorsing Lawrence Tech organizations, clubs, and teams.

The Student Government is composed of three interacting branches working in cooperation with each other.

- Student Administration (President and Executive Vice President)
- Student Senate (Senators and Senate Leader)
- Student Judiciary (Parliamentarian and Judicial Review Committee)

The President and Executive Vice President are elected each spring. Students may join the Student Senate, even as freshman, during a campus election in September. They may represent their college, area of residency, or student interest. Meetings are bi-weekly and legislature such as funding bills, resolutions, and other matters are discussed and implemented. There is compensation for all Student Government positions! If you have any questions or would like to run for a Senate seat, please contact [stugov@ltu.edu](mailto:stugov@ltu.edu).

## Students Planning Activities Monthly (SPAM)

SPAM is a student-based organization that coordinates campus activities which enhance and enrich the quality of student life at Lawrence Tech by addressing the needs and interests of its diverse student body. SPAM is open to all students from all academic majors. Members attend the annual National Association of Campus Activities mid-America and national conferences, monthly meetings, and SPAM-associated events. To get involved, contact the Office of Student Engagement at 248.204.3142 or email [stuevent@ltu.edu](mailto:stuevent@ltu.edu). Monthly event information is available at [www.ltuspam.org](http://www.ltuspam.org).

## Professional Organizations

American Chemical Society (ACS)  
American Concrete Institute  
American Institute of Architecture Students (AIAS)  
American Institute of Graphic Arts (AIGA)  
American Society of Civil Engineers (ASCE)  
Architectural Engineering Institute (AEI)  
Biomedical Engineering Society (BMES)  
Institute of Electrical and Electronic Engineers (IEEE)  
National Society of Black Engineers (NSBE)



# Lawrence Technological University

Society of Physics Students  
Society of Women Engineers (SWE)

## **Honor Societies**

Lambda Iota Tau and Tau Iota  
Tau Sigma Delta

## **Clubs and Publications**

Brew Brothers  
Collegiate Entrepreneurs' Organization (CEO)  
Commuter Student Association  
Concrete Canoe and Steel Bridge  
Greek Council  
Honors Society  
International Cultural Council (ICC)  
Lawrence Tech Alternative Spring Break  
Life Science Association  
LTU Bike Crew  
LTU Chess Club  
LTU CRU (Campus Crusade for Christ)  
LTU Habitat for Humanity  
LTU Ultimate (Ultimate Frisbee)  
LTU Veterans Group  
Math Club  
Order of Omega  
Out! At LTU with Friends  
Residence Hall Association  
Sigma Iota Epsilon  
SAE Aero Design®  
SAE Baja Team®  
Society of Dramatic Arts (SODA)  
Sorority Council  
Students Constructing a Sustainable Tomorrow  
Tau Beta Pi  
U.S. Green Building Council Students (USGBC)

## **Greek Life**

Social fraternities and sororities are regulated on campus by four governing bodies which assist the individual Greek-letter social organizations in maintaining standards, while also creating opportunities to collaborate and socialize. The Greek Council provides long-term support of Greek life on campus and coordinates and organizes "All Greek" events. Three other councils, the Interfraternity Council, Sorority Council, and National Panhellenic Council provide oversight specific to a particular type of Greek organization.

Greek-letter social organizations provide opportunities for students to perform civically and socially and to develop long-term relationships, as well as leadership and communication skills, but they also take

# Lawrence Technological University

academics just as seriously. The Order of Omega honor society is open exclusively to members of these Greek-letter social organizations.

## *Interfraternity Council*

Composed of the elected officers and representatives of the Greek organizations at Lawrence Tech, the IFC provides leadership for five fraternities and three sororities and improves communication among the various Greek-letter social organizations on campus.

## *Greek Letter Organizations*

### Fraternities

Alpha Sigma Phi  
Phi Beta Sigma  
Phi Kappa Upsilon  
Sigma Phi Epsilon  
Sigma Pi  
Theta Tau

### Sororities

Chi Omega Rho  
Delta Phi Epsilon  
Delta Tau Sigma

## **ATHLETICS AND INTRAMURALS**

The following programs are administered by the Department of Student Recreation, Athletics, and Wellness, located in the Don Ridler Field House.

**Varsity Athletic Programs** The Lawrence Technological University Department of Student Recreation, Athletics, and Wellness is committed to providing a competitive, culturally diverse, and gender-equitable sports program that operates within the rules and regulations of the University and the National Association of Intercollegiate Athletics (NAIA). The department, along with its student-athletes, strives to uphold the five “Champions of Character” core values of respect, responsibility, integrity, servant leadership, and sportsmanship. The Blue Devils currently compete in:

- Men’s and Women’s Basketball
- Men’s and Women’s Bowling
- Men’s and Women’s Cross Country
- Men’s and Women’s Lacrosse
- Men’s and Women’s Soccer
- Men’s Hockey (ACHA)
- Women’s Volleyball

**Club Sports** Each club sport is a student-led organization composed primarily of students, faculty, and staff. Each club is formed, developed, governed, and administered by the student membership of that particular club, working with the LTU recreation staff. The key to the success of this program and each club is student leadership, interest, involvement and participation. The recreation staff is available to students for consultation on concerns and ideas and for administrative assistance.

**Intramural Sports** Lawrence Tech provides an extensive intramural program that offers competition in flag football, basketball, indoor volleyball, badminton, quidditch, billiards, racquetball, golf, indoor soccer,

## Lawrence Technological University

table tennis, disc golf, dodgeball, and more! It is free to participate in most intramural leagues and tournaments. Any student, faculty, staff member, or alumnus of LTU is eligible to play, regardless of skill level. If you are interested, check out the intramural schedule at [www.IMLeagues.com/LTU](http://www.IMLeagues.com/LTU).

**Fitness and Wellness** The fitness and wellness program consists of Team Fitness, Zumba, Bootcamp, and Yoga Core Fusion. Classes are free of charge to all students, faculty/staff, and members of the Don Ridler Field House. Each class is taught by exciting and energetic, certified instructors. The schedule changes from semester to semester and alterations or additions will be posted on [www.BlueDevilAthletics.com](http://www.BlueDevilAthletics.com).

For more information about any of these programs, visit [www.BlueDevilAthletics.com](http://www.BlueDevilAthletics.com), email [sturec@ltu.edu](mailto:sturec@ltu.edu) or call 248.204.3850.

### ATM (CASH)

There is an automated teller machine (ATM), hosted by Michigan First Credit Union, located in the atrium of the Buell Management Building, which is available any time the building is open. This unattended station allows withdrawals, deposits, or account transfers, using debit cards with Cirrus, Plus, Pulse, Star, or Quest network logos or a Visa, MasterCard, Discover, or American Express credit card and a personal identification number. For local Michigan First Credit Union branches, call 800.664.3828.

### BOOKSTORE

The bookstore is located in the Buell Management Building. Books, supplies, snacks, and Lawrence Tech apparel and gifts may be purchased. Textbooks may be purchased online at [www.whywaitforbooks.com](http://www.whywaitforbooks.com). Book rentals and eBooks are also available. Fall and spring semester hours are Monday through Thursday, 9 a.m. – 7 p.m., and Friday, 9 a.m. – 1 p.m. For other times, call 248.204.3030 or visit [www.ltu.edu](http://www.ltu.edu).

### BUILDING HOURS

In general, campus facilities are open from 7 a.m. to 10 p.m. seven days a week, excluding holidays. Students may use the facilities 24 hours per day provided the dean of their college, a faculty member, or faculty advisor has approved and forwarded to the Department of Campus Safety an extended-access authorization via email. Faculty members and faculty advisors should check with the dean of their respective college regarding the policy on allowing extended access to the facilities of that college. The dean, faculty member, or advisor may forward extended-access authorizations via email to [ltu\\_safety@ltu.edu](mailto:ltu_safety@ltu.edu). Please allow 24 hours advance notice for extended hours requests. Individuals found not in compliance with this policy may be subject to the University discipline system. Students using campus facilities, especially after hours, must carry their Lawrence Tech identification card with them and must present it if requested to do so by a Lawrence Tech Campus Safety officer.

### CAMPUS DINING

Real Food on Campus (RFoC), located on the second floor of the Buell Management Building, is open during the fall and spring semesters and provides “all you care to eat” meal options that include staffed food stations – comfort food, deli, exhibition, grill, pizza and pasta, market (soups and salads) – and a bakery. Campus Dining also oversees the Einstein Bros. Bagels in the atrium of the Buell Management Building and a Provisions on Demand (P.O.D.) express outlet in the UTLC lobby, which offers grab-and-go salads and sandwiches, snacks, and beverages.

Lawrence Tech offers meal plans and Blue Devil Dollars. Meal plans are used at the RFoC. Blue Devil Dollars work like a debit card and can be used at all Lawrence Tech dining locations. **Lawrence Tech requires all residential students to participate in a meal plan.**

## Lawrence Technological University

As the exclusive food service vendor for the University, Aramark has the exclusive right to provide all food services, including catering and concessions, for all University purposes, including events offered by student organizations. Questions regarding this policy may be directed to the director of campus dining at 248.204.3203.

### **CAREER SERVICES**

The Office of Career Services is much more than a place where students can go to find a job when they graduate. The Office of Career Services provides a wide variety of services and programs that, beginning as soon as the freshman year, can help students develop their career plans and establish career goals by identifying their abilities, values, and interests and then targeting occupations that reflect those abilities, values, and interests. The office also assists students with gaining cooperative education and internship experiences in their chosen field.

Services include career advising, on-campus employment, cooperative education and internships, career workshops, resume critiques, mock interviews, career fairs, employer presentations, and on-campus interviews. Lawrence Tech's online career resource center, CareerQuest ([www.ltu.edu/career\\_services/careerquest.asp](http://www.ltu.edu/career_services/careerquest.asp)), lists opportunities for students and alumni. Students can also schedule on-campus interviews, register for career fairs and expos, research employers, and much more on CareerQuest.

The Office of Career Services is located in Room C404, A. Alfred Taubman Student Services Center, and is open daily from 8:30 a.m. to 4:30 p.m. Appointments can be made as well.

The office also posts on-campus employment opportunities for students. Students may work as assistants for the colleges, departments, and offices, such as Campus Dining; Student Recreation, Athletics and Wellness, and the University Bookstore. Beginning in August, students may view available positions through CareerQuest ([www.ltu.edu/career\\_services/careerquest.asp](http://www.ltu.edu/career_services/careerquest.asp)). Student assistants are a great asset to the University. Students' responsibilities vary from administrative support and applied research to general labor.

Need help writing a resume? Contact the office to meet with a career services staff member for assistance.

### **COMPUTER AND ONLINE LEARNING RESOURCES**

The former LTU Laptop Initiative has been transformed into an integral component of the LTuZone. In addition to providing access to industry-standard software and the hardware to run it, the LTuZone also includes onsite and remote technical support of that software and hardware so students can focus on their learning.

Each fall semester, specially configured and branded laptop units, complete with furnished software, are available to all undergraduate and some graduate students after program conditions are met.

Undergraduate students may obtain a laptop upon registration, payment of a \$500 security deposit, and acceptance of the terms and conditions of a laptop agreement. The term of the agreement is up to one year. Graduate students may also obtain a laptop for a charge of \$95 per credit hour, if laptops are still available at the end of the undergraduate laptop distribution period. Laptops are distributed at the beginning of every semester. Laptops are also available to Lawrence Tech faculty.

# Lawrence Technological University

A uniform suite of the most recent software applications valued at over \$13,000 is installed on each laptop. Software applications specific to each college are also included, so that students have all the software resources required for their declared majors.

All students, faculty, and staff have access to email (using Google Apps for education), the Internet, and file storage. Wireless networking is available across the entire campus, so access is possible anywhere in the academic cluster and in housing. Students can use several public printers located in the Help Desk office, the Engineering Building, the library, Architecture Building and in University Housing-North and Housing-South.

## Printers

HotSpot printers are located in the library (pay at the desk or use PayPal), in the Architecture Resource Center (A131), and in the atrium of the Buell Management Building. Black-and-white prints are free. There is a charge for color printing.

The Architecture Computer Resource Center (ACRC) Print Desk provides printing, scanning, and computer-related services. Services such as color printing, large-format printing, and plotting, scanning, and report binding are available throughout the school year during operating hours. Specialized printers produce large-format CAD plots, as well as photo-quality prints and posters. After hours, 24/7 self-service black-and-white printing is available on the public printer near the Print Desk, as well as color laser printing and scanning on the HotSpot printer in the lobby adjacent to the Print Desk.

### *Public Printer Access*

The following printers are available to all Lawrence Tech faculty, staff, and students, and may be installed on laptops without special permissions:

<u>Printer Name</u>	<u>Location</u>
C203	Help Desk
E152	Engineering Building Computer Lab
M113A	Library
APTN1	North Housing
APTS1	South Housing
S202	Arts & Science Lounge
ACRC-Ricoh	Architecture Lounge

**Note:** In order to save paper and cut costs, print jobs sent to the Help Desk, library, and North and South Housing printers will not print until they are released. If you print to the M113A, APTN1, or APTS1 printers, please ask the attendant to release your print job.

### *Hot Spot Printing*

Print directly from your smartphone, laptop, or tablet to one of our convenient campus locations:

#### ACRC

- [ltuacrc@printspots.com](mailto:ltuacrc@printspots.com)
- [ltuacrc-color@printspots.com](mailto:ltuacrc-color@printspots.com)
- <http://www.printeron.net/ltu/acrc>

#### Buell Management Building (atrium)

- [ltuatrium@printspots.com](mailto:ltuatrium@printspots.com)
- [ltuatrium-color@printspots.com](mailto:ltuatrium-color@printspots.com)
- <http://www.printeron.net/ltu/atrium>

# Lawrence Technological University

## Architecture Resource Center (A131)

- [ltuarc@printspots.com](mailto:ltuarc@printspots.com)
- [ltuarc-color@printspots.com](mailto:ltuarc-color@printspots.com)
- <http://www.printeron.net/ltu/arc>

## Library

- [ltulibrary@printspots.com](mailto:ltulibrary@printspots.com)
- [ltulibrary-color@printspots.com](mailto:ltulibrary-color@printspots.com)
- <http://www.printeron.net/ltu/library>

Select the location that you want to print to, decide if you want black and white or color, and follow the instructions to print.

- Black-and- white printing is free
- Color printing is \$0.50/page for 8.5x11; \$1.00/page for 11x17

## Help Desk

The Help Desk, located in the Taubman Student Services Center (C203), provides walk-in support to all students, faculty, and staff, including problem diagnosis; laptop distribution, return, and repair; wireless network configuration; password changes; email setup; and more. Laptop diagnosis and minor repairs are handled on-the-spot. Other repairs are made within 24 to 48 hours, and a loaner laptop is provided if needed.

Help Desk hours are Monday – Thursday, 8 a.m. – 6:30 p.m., and Friday, 8 a.m. – 4:30 p.m., during the fall and spring semesters. Telephone support is also provided during these hours at 248.204.2330. The Help Desk also provides after hours and weekend support via email at [helpdesk@ltu.edu](mailto:helpdesk@ltu.edu). Hours are reduced during breaks and the summer months. For more information about Help Desk services and the laptop program, visit [www.ltu.edu/ehelp](http://www.ltu.edu/ehelp).

## My.ltu.edu

Lawrence Tech's comprehensive e-learning and services portal, *my.ltu.edu*, offers an expanding variety of resources and conveniences. Among them is Blackboard, a comprehensive and flexible e-learning software platform that delivers the University's course management system, customized institution-wide portals, online communities, and an advanced architecture that provides for Web-based integration with the University's administrative systems.

The University's course management system offers students the 24/7 access to professors and fellow students that is not available in the typical classroom environment. Professors post their syllabi online, as well as class lectures and assignments, for immediate retrieval anytime, anywhere. Other features available through Blackboard are discussion boards for posting questions to and receiving answers from other students and the professor in the class; Virtual Chat Room capabilities for asynchronous communication with the entire class; the ability to submit assignments to professors; Web conferencing; instant messaging; podcasting; and many others.

## LTU Online

LTU Online delivers fully online versions of degree and certificate programs for working students. Today's global work environment may prevent students from taking on-campus classes. LTU Online is designed to help address these challenges and bring the quality of a Lawrence Tech education to wherever students work or their family takes them.

# Lawrence Technological University

LTU Online offers core and elective courses in these programs:

Bachelor of Science in Business Administration  
Bachelor of Science in Information Technology  
Undergraduate Certificate in Building Information Modeling and Computer Visualization

Master of Architecture  
Master of Business Administration  
Master of Educational Technology  
Master of Engineering Management  
Master of Science in Industrial Engineering  
Master of Science in Information Systems  
Graduate Certificate in Nonprofit Management and Leadership  
Graduate Certificate in Project Management  
Graduate Certificate in Workplace Technology

Other degree and certificate programs are under development; students should visit LTU Online ([www.ltu.edu/ltuonline](http://www.ltu.edu/ltuonline)) for current information.

All LTU Online degree and certificate programs are academically equivalent to on-campus programs and are fully accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools.

## COOPERATIVE EDUCATION

The Cooperative Education program, located in the Office of Career Services (C404), is a joint venture between the University, selected employers, and students. Work assignments are related to students' major fields of study and are varied to provide a broad range of experience and training. Students are strongly encouraged to complete a cooperative education assignment while studying at Lawrence Tech. Students who participate in a cooperative education assignment report a higher degree of satisfaction with their education and increase their overall employability.

Co-op students:

- gain excellent work experience;
- are paid for learning on the job;
- learn career management skills;
- elect to receive academic credit; and
- enhance the number of opportunities available to them when they graduate, since employers favor students with co-op experience.

Lawrence Tech offers two types of cooperative education. The traditional co-op program, also called the alternating program, allows students to alternate full-time college studies with three 15-week semesters of full-time work. A variation of the traditional program, especially for civil engineering students, takes into account the seasonal nature of the work and involves two semesters (summer and fall) worked back-to-back, followed by a spring semester of college studies and a final semester of summer work experience. Lawrence Tech also offers a parallel co-op program that allows students to work at least 20 hours per week while simultaneously attending classes and maintaining a full-time academic schedule.

## Lawrence Technological University

To participate in the co-op program, students must have at a minimum 2.25 GPA. In the normal course of a complete co-op education program, a student will complete three semesters of work assignments before graduation. Each semester of co-op carries one academic credit, three of which may be applied toward an academic degree.

Many students choose to take advantage of co-op and internship opportunities. Although most assignments are in southeastern Michigan, students have completed assignments in Ohio, Indiana, New Jersey, California, Florida, Germany, and Mexico.

### **DEAN OF STUDENTS**

The Office of the Dean of Students, located in the A. Alfred Taubman Student Services Center (C405), serves as the central resource for activities that are coordinated through the Division of Student Affairs. The dean of students serves as the primary advocate for students and works to insure that students are offered a quality college experience. Staff members in the Division of Student Affairs provide services to help students successfully complete their academic studies and coordinate opportunities for fellowship, fun, and rewarding college experiences. The Office of the Dean of Students offers personal, confidential, and nonbiased assistance in addressing any concerns a student may have regarding his or her rights or responsibilities as a member of the campus community. Services coordinated by the Office of the Dean of Students include:

#### ***Student Events and Activities***

Annual social events to encourage students to interact with other students on campus are coordinated by the Office of the Dean of Students. Popular programs include the fall semester Welcome Back Picnic, New Student Convocation, movie nights, and "Pushing Honey Through" certificates for supportive family members of graduating students. Students can also enjoy Homecoming in the fall and Winterfest in the winter months and a host of sporting events.

#### ***Student Code of Conduct Adjudication***

Honesty, integrity, and caring are essential qualities of an educational institution, and a concern for values and ethics is important to the whole educational experience. The Student Code of Conduct outlines the rights and responsibilities and expected levels of conduct of students in the University community. Fundamental to the achievement of community among the members of the University is the recognition by all such members that each shares a responsibility to observe University regulations. This obligation, which is an extension of the citizen's responsibility to observe the law of the land, is an essential corollary to participation in the academic rights afforded to members of the University. A student voluntarily joins the Lawrence Technological University community and thereby assumes the obligation of abiding by the standards prescribed in the Student Code of Conduct. The University, through the Office of the Dean of Students, maintains the exclusive authority to impose sanctions for behaviors that violate the Student Code of Conduct. The Student Code of Conduct can be found at [www.ltu.edu/student\\_affairs/student\\_conduct.asp](http://www.ltu.edu/student_affairs/student_conduct.asp).

#### ***Support Services***

Students needing assistance with personal or academic challenges during their college career are welcome to contact staff in the Office of the Dean of Students, who can act as liaisons between students and faculty. Academic study skills development and strategies are provided by staff in the Academic Achievement Center.



# Lawrence Technological University

## DISABILITY SERVICES

The Office of the Dean of Students, 248.204.4100, coordinates Lawrence Tech's compliance with Sections 503 and 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. The University does not discriminate against students with disabilities in recruitment, admission, or treatment after admission. In addition, the University makes reasonable accommodations to permit students with disabilities to fulfill academic requirements and provides effective auxiliary aids to ensure that they are not excluded from programs because of their disabilities. Eligibility for accommodations is determined on an individual basis.

For additional information on eligibility for services, accommodations, and student responsibilities, please refer to Lawrence Tech's website or contact the Office of Disability Services at 248.204.4100 or via email at [disability@ltu.edu](mailto:disability@ltu.edu) or through the Michigan Relay Center at 800.649.3777 to set up an appointment. Students who believe that the University may not be meeting these responsibilities or who believe that they have been otherwise discriminated against based upon their disability may contact the Section 504 officer in the Office of the Dean of Students, Lawrence Technological University, 21000 West Ten Mile Road, Southfield, MI 48075-1058.

## DTE ENERGY ONE-STOP CENTER

Located on the third floor of the A. Alfred Taubman Student Services Center, the DTE Energy One-Stop Center assists students with records and registration, financial aid, and student accounting transactions. The center is open Monday and Tuesday, 8 a.m. – 6:30 p.m., and Wednesday through Friday, 8 a.m. – 4:30 p.m.

## ENGINEERING ADVISING CENTER

The Engineering Advising Center is in the dean of engineering's office suite (E98). The center's primary purpose is to advise students having academic difficulty. Hours of operation are normally Monday – Thursday, 9 a.m. – 6 p.m., or by appointment. To make an appointment, call the advising center at 248.204.3506 or the dean of engineering's administrative assistant at 248.204.2500.

## FAX SERVICE

Fax services (send only) are available at the bookstore, which is located in the Buell Management Building atrium. There is a small fee for this service.

## FIELD HOUSE/RECREATION

The Don Ridler Field House includes a gymnasium, weight and conditioning room, running track (1/11th mile), two racquetball/wallyball courts, fitness room, spirit shop, and men's and women's locker rooms with showers and saunas. Fitness and wellness programs are available to all members.

### Field House Hours

#### *September – Mid-May*

Monday	6:30 a.m. – midnight
Tuesday	8 a.m. – 11 p.m.
Wednesday	6:30 a.m. – midnight
Thursday	8 a.m. – 11 p.m.
Friday	6:30 a.m. – 10 p.m.
Saturday	9 a.m. – 5 p.m.
Sunday	Noon – 10 p.m.

#### *Mid-May – August*

# Lawrence Technological University

Monday	6:30 a.m. – 10 p.m.
Tuesday	8 a.m. – 10 p.m.
Wednesday	6:30 a.m. – 10 p.m.
Thursday	8 a.m. – 10 p.m.
Friday	6:30 a.m. – 9 p.m.
Saturday	9 a.m. – 1 p.m.
Sunday	Closed

## HOUSING

University Housing at Lawrence Tech provides more than just a room in which to sleep and study. The living and learning environment that is fostered within University Housing supports students' academic, social, cultural, and personal growth. The University Housing staff is committed to assisting residents in all aspects of their collegiate experience by providing a safe and healthy environment in which to pursue their academic goals, promoting the ideals of community living by emphasizing personal responsibility and respect for others, creating opportunities for student involvement and personal development, and offering advice and information to residents.

The friendships that develop among University Housing residents is unequalled by any other living option. Residents who take advantage of this environment tend to improve both their academic performance and their satisfaction with their college experience. Each residence hall community offers opportunities for students to get involved in numerous activities and programs.

Lawrence Tech has two residence halls, University Housing-North and University Housing-South. Each hall features furnished one- and two-bedroom apartment-style suites that accommodate two to four students depending on the size of the suite. Both buildings feature air-conditioning, cable television, wireless connectivity, carpeting, private bathrooms, and full kitchens. Washers and dryers are available in each suite in Housing-North. Free laundry facilities are located within Housing-South. Free parking is provided for residents close to each building.

Anyone seeking on-campus housing should complete a Housing Application and Contract and pay the application fee. Applications are available online at [www.ltu.edu/housing/renewal.asp](http://www.ltu.edu/housing/renewal.asp) Students are encouraged to apply for housing as soon as they are admitted.

Applicants must be admitted to Lawrence Technological University in order to live in University Housing. Students may apply for University Housing before registering for classes but will not be allowed to take occupancy of their assigned room until they are registered. For the fall and spring semesters, undergraduate residents must maintain at least nine credit hours per semester or have a co-op or an internship to be eligible for housing. For more information, please contact the Office of University Housing at 248.204.3940.

Lawrence Technological University requires all students with 59 credits or less, including international students, to reside in on-campus housing, University Housing-North or -South. Students will be exempted from the residency requirement if they fit into one of the following categories:

1. Students who are 21 years of age or older, having reached that age no later than the first day of classes for the applicable semester.
2. Veterans of at least two years of active military service.
3. Students who are married.

## Lawrence Technological University

4. Students who have custody of dependent children.
5. Students who commute for 30 minutes or less from the permanent, legal residence of their parent(s) or legal guardian.
6. Students who are enrolled for less than nine credit hours per semester.

Students wishing to be granted an exemption must meet with the Director of Residence Life.

### Renter's Insurance

See Student Insurance.

### IDENTIFICATION CARD

Lawrence Tech's student identification card combines a photo with a magnetic strip/bar code and a cash debit option that allows students to load their card with Blue Devil Dollars, which can be spent at all Lawrence Tech dining locations. The ID card also serves as the student's library card and should be presented at the circulation desk when checking out books or using the Reserve Desk. Instructions for applying for a card are provided to new students during Orientation and Registration (O & R). There is a \$10 replacement charge for lost ID cards. Replacement ID cards must be purchased at the DTE Energy One-Stop Center. If an ID card is damaged and needs to be replaced, the student must present it at the DTE Energy One-Stop Center to have the replacement charge waived.

### INTERNATIONAL STUDENTS

The Lawrence Tech community places great value on the cultural and intellectual diversity that international students bring to the University. The Office of International Programs serves as the primary contact for international students and scholars on campus. This population includes undergraduate, graduate, and doctoral students, as well as professors, research scholars, and post-doctoral fellows.

The Office of International Programs advises foreign nationals on status maintenance, government regulations, visa requirements, and work authorization, and provides a host of other resources. The office works to resolve student compliance issues with Homeland Security and United States Citizenship and Immigration Services (USCIS), as well as to process and update documentation for international students. This includes updating and maintaining the Student and Exchange Visitor Information System (SEVIS) to comply with government reporting requirements, authorizing F-1 Curricular Practical Training and Optional Practical Training, J-1 academic training, program extensions, and other SEVIS updates. The office also works to update faculty, staff, and students on government regulations and issues impacting international students studying in America.

The Office of International Programs provides a mandatory and comprehensive weeklong orientation, held the week before classes begin each semester, to support international students in acclimating to their new environment. Students also meet with their advisors during this time.

The Office of International Programs designs and implements events that increase global and cultural awareness among all Lawrence Tech students. The office provides outreach programs and workshops on a myriad of topics, including employment, cultural transition, academic issues, campus resources, and programming.

The Office of International Programs is located in the A. Alfred Taubman Student Services Center in room C405 and can be reached at 248.204.4100. Normal office hours are Monday–Friday, 8 a.m. – 4:30 p.m.

# Lawrence Technological University

## LAPTOP SUPPORT HELP DESK

See Computer and Online Learning Resources.

## LIBRARY

Lawrence Tech's library is conveniently located on the lower level of the Buell Management Building, one flight below the atrium. The room boasts an attractive indoor garden area for year-round greenery. The library houses a broad selection of books, periodicals, online databases, full-text electronic books and periodical articles, microforms, and other material that has been selected to enhance the curriculum areas of the University. Collection strengths include engineering, technology, architecture, and management.

Among the library's unique resources is the 3,000-volume professional library of the late renowned architect Albert Kahn and a complete collection of SAE International papers since 1965. The professional librarians, on duty during all scheduled hours, are skilled in locating information both in the Lawrence Tech collection and at numerous other institutions. They also provide individualized and group instruction on how to use the library efficiently. Students have full access to the stacks for browsing and independent research and can always count on getting personalized reference assistance from a reference librarian.

While the library's catalog is available to the public on the Lawrence Tech website ([www.ltu.edu/library](http://www.ltu.edu/library)), premium content, including databases and full-text material, tailored to serve the needs of Lawrence Tech curricula, is available online via password-protected links. Students can access this content using their Blackboard log-in information. In addition to print and database sources, more than 69,000 electronic books and more than 68,000 electronic journal titles are accessible from the site as well.

When an item is not available on campus, the library has negotiated agreements with many local and statewide academic and public libraries for direct borrowing privileges or, in some cases, for borrowing through a special arrangement. As an alternative, materials can be requested and shipped directly to Lawrence Tech from Michigan libraries via the MelCat service or from libraries across the nation through the use of interlibrary loan. It is recommended that students always make the Lawrence Tech library their first stop when beginning a research project.

### Library Account

All students have a special library account that may be accessed through the "My Account" feature of the library's online catalog (<http://libweb.campus.ltu.edu>). Once logged in, students may place requests directly from the catalog and review their account for items checked out, fines, etc. For questions about how to use this feature or for any other questions, contact the library at 248.204.3000 or via email, [refdesk@ltu.edu](mailto:refdesk@ltu.edu).

### Loan Privileges

Lawrence Tech students may borrow most material from the library for three weeks. Certain special materials circulate for shorter periods. Reserve and reference materials must be used in the library. Students with fines or lost item charges of \$10 or more may not borrow library materials.

### Lost Item Charge

# Lawrence Technological University

This includes replacement value, a service charge, and a maximum \$5 fine. Patrons with lost item charges or excessive overdue fines are not allowed to check out materials and an Academic Hold will be placed on their records.

## Overdue Materials

### *Overdue Charges*

10 cents per item per day (books, MelCat books)

\$1 per item per day (all Reserve Desk items, DVDs, and Interlibrary Loan books)

## Renewals

Students may renew material as long as no one has requested the item. Students may renew books through their online library accounts or by calling the Circulation Desk at 248.204.3009. Books that are overdue may only be renewed by contacting the library.

## Other Services

In addition to curriculum-based materials, the library also carries a selection of DVDs, a browsing collection of popular books, and a small collection of graphic novels. The staff maintains a presence on Web 2.0 sites such as Facebook and Flickr, streaming information of interest for Lawrence Tech students. The library also hosts a public printer (M113A), and two computer scanners, along with black-and-white and color photocopiers.

## LOCKERS

Lockers in the Architecture Building and the University Technology and Learning Center (UTLC) are assigned by the College of Architecture and Design, 248.204.2880.

## LOST AND FOUND

The Department of Campus Safety (248.204.3945) is the clearinghouse for lost and found articles. Campus Safety delivers all found Lawrence Tech laptop computers to the Laptop Help Desk (248.204.2330).

## MOTOR VEHICLES AND PARKING

All students may have motor vehicles on campus. Ample paved, lighted parking is provided free for students, faculty, staff, and visitors. Each student, faculty, or staff vehicle must display a current Lawrence Tech parking permit, which is available from the Department of Campus Safety. Lawrence Tech Campus Safety officers are authorized to write tickets and levy fines for improper driving or parking. Campus motor vehicle parking and traffic regulations are outlined in the *Student Handbook*. The University is not liable for accidents, damage, or theft.

## ONLINE STUDENT SERVICES

Lawrence Tech offers convenient online student services. Students can register for courses, view their academic records and account balances, make tuition payments, and conduct financial aid transactions through BannerWeb from any location at any time.

Students may register online using their nine-digit student identification number and their PIN. Students are required to meet with their advisor prior to registering for classes. In order to be allowed to register, students must not owe a balance from previous semesters.

# Lawrence Technological University

Students may also view and print an unofficial copy of their student transcript, provided they do not have a hold on their records (the result of owing the University money) that prohibits this function. See also Computer and Online Learning Resources.

## **OPEN DOOR POLICY**

The president's door is always open to students. Usually after consultation with instructors, department chairs, college deans, the dean of students, the provost, or other responsible administrative offices, students will find that any concerns will be satisfactorily addressed. If not, students may contact the president's executive assistant, who will prepare a briefing and arrange a convenient appointment between the student and the president.

## **POSTAL AND PACKAGE SERVICES**

Lawrence Tech Campus Safety delivers and picks up incoming and outgoing campus mail and packages. At the residence halls, mail and packages are delivered to the Information Desks, where stamps may be purchased.

United Parcel Service (UPS) has an outbound package kiosk located outside the Buell Management Building on the north (C Lot) side of the building (atrium level).

## **RAFFLE OR CHARITABLE GAMING EVENT GUIDELINES**

Any student organization requesting to host a gambling tournament or raffle must contact the Office of Student Engagement to receive guidance on completing a Charitable Gambling Application through the State of Michigan's Bureau of the State Lottery. The student organization must submit the application to the Bureau of the State Lottery with appropriate application fees, along with the organization's constitution, and a signed letter from the dean of students. It will take approximately four to six weeks for the Bureau of the State Lottery to approve any application. Visit [michigan.gov/lottery](http://michigan.gov/lottery) for more information. (The Bureau of the State Lottery does not allow education-subordinate organizations to raffle prizes more than \$500. Therefore, there is no need to complete the Millionaire Party application to obtain a license.)

## **RALLIES/MARCHES/PROTESTS**

Student groups wanting to hold a rally, march, or protest should contact the Office of Student Engagement and make an appointment with a professional staff member to discuss the event. This person will tell the student group representative what things must be done in order to secure approval of the event. If the event includes any form of public-address equipment or amplified sound, the group will have to complete the necessary forms from Campus Facilities and alert Campus Safety.

## **SAFETY AND SECURITY**

A safety team patrols Lawrence Tech 24 hours a day. But because no metropolitan area is immune from criminal activity, all students should take an active role in assuring their personal safety.

Report suspicious persons or activities immediately to the Department of Campus Safety (available 24 hours a day) by dialing ext. 3945 (or 248.204.3945). For emergencies, on campus phones ONLY dial \*911 (Star-9-1-1) to be connected to Campus Safety; otherwise, dial 911, which will contact the appropriate emergency service.

Lawrence Technological University, in full compliance with the Federal Crime Awareness and Campus Security Act of 1990, makes security information available to Lawrence Tech's students, faculty, and staff,

# Lawrence Technological University

applicants for admission, newly hired employees, and the general public. Statistics on campus crime may be examined at the Department of Campus Safety. Campus safety and security statistics for the prior academic year are available at [www.ltu.edu/campus\\_safety](http://www.ltu.edu/campus_safety).

## **SPIRIT ROCK**

The Spirit Rock exists to provide students and student organizations the opportunity to express their spirit and pride in Lawrence Technological University. To maximize this opportunity, students are expected to respect the following regulations:

With the exception of painting, the physical condition of the rock is not to be altered in any way that will change its shape, size, or orientation.

- The rock is not to be moved.
- Derogatory or profane words or messages on the rock are prohibited.
- There is no limit to the number of times the rock may be painted in total or by any one organization.

## **STUDENT ENGAGEMENT**

The Office of Student Engagement (C404) provides programs and services for the entire University community. Student Engagement coordinates a variety of opportunities for students to become involved on campus and in the Southfield and Metro Detroit areas. The mission of Student Engagement is to encourage the intellectual, social, and civic development of students individually and through student groups. The programs and services provided and/or supported by Student Engagement are:

Commuter Student Support Services  
Discovery Days  
Greek Life  
Multicultural Student Support Services  
Student Government  
Student Organizations  
Students Planning Activities Monthly (SPAM)  
Welcome Week

### **Commuter Student Support Services**

Commuter Student Support Services serves the 80 percent of students who commute to Lawrence Tech. Programs and services work to build community and create a sense of connectedness between commuters and the University. Programs include day trips, Good Evening Commuters workshops, and online resources that benefit the commuter population.

### **Multicultural Student Support Services**

Multicultural Student Support Services exists to advance Lawrence Tech's commitment to diversity in increasing the recruitment, retention, and graduation of all students, and particularly underrepresented groups (including minority/ethnic, women, and GLBT students), by developing strategies that engage students in the attainment of academic excellence and social success.

This area serves as a support and advocacy network through which students from underrepresented groups are provided effective assistance during their academic tenure. Programs include welcome receptions; cultural programs that provide forums to enhance the intellectual, social, and personal

## Lawrence Technological University

development of students; discussions and speakers who focus on relevant social, cultural, and academic issues; and the advising of multicultural student organizations.

### STUDENT AFFAIRS

The Division of Student Affairs coordinates efforts, programs, and services that support the development of a vibrant learning community on campus. The division's purpose is to support students, staff, and faculty in achieving the mission of Lawrence Tech by creating communities that foster and support student learning and development.

Offices included in the division are the Office of the Dean of Students; Campus Dining; Career Services; Clinical Counseling Services; Disability Services; First-Year Programs; International Programs; Student Engagement; Student Recreation, Athletics, and Wellness; University Housing; and the campus switchboard. The Office of the Dean of Students serves as the central resource for activities coordinated by the Division of Student Affairs. Events, programs, and services provided through these offices are designed to enhance student involvement and student leadership development.

### STUDENT COMMUNICATIONS/EMAIL

Lawrence Tech's official method of communication with students is through the use of University email. All students are issued a free [ltu.edu](mailto:ltu.edu) email account. They are expected to check their Lawrence Tech email accounts frequently and regularly for notices related to enrollment and financial matters, including important dates and deadline information.

Students' email account IDs are composed of the first letter of their first name and the first eight letters of their last name followed by a number if there are duplicates. Email can be accessed off campus at <http://webmail.ltu.edu>. For assistance, contact the Help Desk at 248.203.2330.

Students should note that when using Blackboard, their Lawrence Tech email address is loaded to their courses as their default email address. This means that when posting notices on discussion boards, etc., within Blackboard, students' Lawrence Tech email accounts are visible to others within the class. Students can change their default email address within Blackboard to route their Blackboard email to another account.

Blackboard also functions as a major communications and safety hub of the University, with student groups, professional organizations, and administrative offices having their own organizations within Blackboard.

### STUDENT INSURANCE

A 12-month health and accident insurance policy is available to all full-time students at a reasonable cost. Contact the DTE Energy One-Stop Center or the Office of the Dean of Students for additional information.

Lawrence Technological University advises all students living in the residence halls to obtain personal property insurance (renter's insurance). Many students may have their personal property covered under their parents' homeowner's insurance policy; check with the insurance provider to determine applicable coverage. Personal property insurance for those students not covered by their parents' homeowner's policy or for students seeking additional coverage is available through National Student Services, Inc. For additional information, visit its website at [www.nssinc.com](http://www.nssinc.com).



# Lawrence Technological University

## STUDENT LOUNGES

Student lounges are located in the fireplace area of the Engineering Building and in the lobby of the Science Building. Einstein Bros. Bagels, hosted by Campus Dining, has a lounge area located in the atrium of the Buell Management Building and Campus Dining's P.O.D. (Provisions on Demand) is located in the lobby of the UTLC. The Commuter Student Lounge is located in S202 of the Science Building. The Art and Design Center has a small student lounge near the front door.

## STUDENT RECORDS

Lawrence Tech students may view their academic transcripts, account information, and other student-related information through BannerWeb at [my.ltu.edu](http://my.ltu.edu). Student records are located in a secured area that requires the student's Banner identification number (excluding the initials) and PIN to access the information.

## VETERANS

The U.S. Department of Veterans Affairs (VA) provides a wide range of benefits to veterans. Veterans should contact the VA on questions concerning eligibility. New programs for some reservists and active duty personnel eligible for benefits are available as well visit [www.gibill.va.gov](http://www.gibill.va.gov).

All veterans receiving GI benefits are expected to maintain satisfactory academic progress. VA regulations permit only a two-semester probation period unless there are mitigating circumstances as determined by the VA. The University will inform the VA and the student when the veteran does not meet academic standards of progress and is no longer eligible for benefits.

For additional information and details, contact the DTE Energy One-Stop Center at 248.204.2280.

## Retrospective

**“All the worthwhile and precious things in life are only obtained through continuous and exacting effort, and their worth is in direct proportion to the effort put forth for their attainment.”**

**Russell E. Lawrence**  
1889 – 1934

It was a firm belief in the future that motivated Russell E. Lawrence to found a university in 1932 – in the midst of the economic chaos of the Great Depression. While less farsighted individuals made predictions of gloom, Russell Lawrence and his brother, E. George Lawrence (who led Lawrence Tech from 1934 to 1964), turned a dream of preparing students for leadership in the new technical era into reality.

For 80 years, Lawrence Tech has continued to prosper and accelerate its growth, hone its educational philosophy of theory and practice, build important community and professional alliances, and forge partnerships with the firms, organizations, and industries who hire Lawrence Tech alumni.

Wayne H. Buell, who served as president from 1964 to 1977 and as chair of the board and chief executive officer until 1981, worked to build a firm foundation for the University’s early emergence as a technological leader. He first advanced the notion that Lawrence Tech was a private college serving a public purpose.

Lawrence Tech’s first housing center, the Buell Management Building, the Don Ridler Field House, a major addition to the engineering facilities, the return of graduate programs, and the massive growth of computer facilities marked the presidency of Richard E. Marburger, who served as president from 1977 to 1993 and also as chair of the Board of Trustees and chief executive officer, 1981–93.

Charles M. Chambers became president in 1993 and served as chancellor in 2006. During his presidency, he oversaw significant enhancement of the University’s international reputation as a distinguished center of technological education and research. A Strategic Plan and Campus Master Plan were adopted to guide the University. Other achievements include: construction of the University Technology and Learning Center, University Housing-North, the A. Alfred Taubman Student Services Center, and the Center for Innovative Materials Research; a redeveloped campus quadrangle; establishment of a Faculty Senate; conversion of the computer system to a client server model with full Internet2 connectivity and online library access; creation of Michigan’s first completely wireless laptop campus; and expanded bookstore, dining, and student activity facilities.

Lewis N. Walker was named interim president in February 2006, became president in July 2006, and chancellor in July 2012. He had previously served as provost, the University’s chief academic officer, and executive vice president. Under Walker, Lawrence Tech aggressively expanded programs in emerging economic sectors such as robotics, defense, and sustainability, including “fast track” certificate programs to help professionals retool themselves for new careers. He was committed to developing the leadership skills of Lawrence Tech’s students and worked with faculty to add a leadership component to the curricula of all undergraduate programs. He forged partnerships with universities worldwide that brought international students to campus and provided further opportunities for Lawrence Tech students to study abroad. He also oversaw the reinvigoration of student life and return of varsity sports to campus.

Virinder K. Moudgil, Lawrence Tech’s seventh president, assumed office in July 2012. He has had a long career as a professor and university administrator and was an active researcher in the molecular

## Lawrence Technological University

mechanisms of steroid hormone action and the hormonal regulation of breast cancer. He previously served as senior vice president and provost at Oakland University.

Lawrence Tech was founded on the principle that every person should have the opportunity for a college education. From the beginning, there were no restrictions on entering students relating to race, sex, color, creed, or national or ethnic origin – only the requirement that students qualify for admission and have the desire to succeed. Working students could earn a baccalaureate degree by attending evening programs, day programs, or a combination of the two – a feature unique in 1932 and still remarkable today.

The school was originally called Lawrence Institute of Technology. Its present name, Lawrence Technological University, was approved on January 1, 1989, by the State of Michigan, and more clearly describes Lawrence Tech's undergraduate and graduate mission.

Lawrence Tech was founded as a college of engineering with only a few hundred students and a handful of faculty. Today it offers more than 100 programs in four colleges, with a total enrollment of approximately 4,500 students, and employs more than 400 full- and part-time faculty. In terms of enrollment, Lawrence Tech is among Michigan's largest independent colleges.

In 1950, associate programs were added to Lawrence Tech's baccalaureate offerings. In 1952 the College of Management was re-established, having its origins in an earlier industrial engineering curriculum. Master's degree programs in management were launched in 1989. The College of Architecture and Design evolved in 1962 from the former architectural engineering department and in 1993 launched a Master of Architecture program. The College of Arts and Sciences was established in 1967. Master's degree programs in engineering were begun in 1990 and in Arts and Sciences in 1997. Doctoral programs were launched in 2002.

Concurrently, there has been an enormous expansion and improvement of facilities. The University's first campus was located in Highland Park, in a building leased from Henry Ford adjacent to the huge manufacturing facility where he built the Model T and perfected the moving assembly line. As enrollment grew, the University acquired acreage in Southfield and in 1955 opened its first building on what had been a General Mills research farm. The campus has since expanded to more than 100 acres and 12 major buildings, as well as the Frank Lloyd Wright-designed Affleck House in Bloomfield Hills, which was donated to the University in 1978.

In 1977, Lawrence Tech shed its "commuter" classification by opening the nine-story University Housing-South residence hall. The 1980s and 1990s were distinguished by the opening of the Wayne H. Buell Management Building and the Don Ridler Field House, numerous improvements to existing buildings, and a substantial increase in state-of-the-art laboratory and computer equipment. The University Technology and Learning Center opened in 2001, University Housing-North in 2002, and the A. Alfred Taubman Student Services Center and the Center for Innovative Materials Research in 2006.

In 2011 competitive athletics returned to campus with the University's entry into the National Association of Intercollegiate Athletics.

The University also offers programs at learning centers in southeastern and northern Michigan, as well as international programs in Asia, Europe, Mexico, and the Middle East.

## Admission to the University

The University has a selective admissions process – the objective of which is to identify men and women who have the highest potential for advancement in their chosen field of study. While the applicant's academic record is a reliable measure for the prediction of academic success, the admissions decision is more complex than admitting students on the basis of a numerical formula. With this intent, Lawrence Tech considers, in addition to the applicant's previous academic record, factors that demonstrate an aptitude for successful study.

To initiate the application process, contact the Office of Admissions (800.225.5588 or 248.204.3160) to receive the Application for Undergraduate Admission or visit the Lawrence Tech website at [www.ltu.edu/futurestudents/apply.asp](http://www.ltu.edu/futurestudents/apply.asp) to apply online.

For the admissions requirements for any of Lawrence Tech's graduate degree programs, see the *Graduate Catalog*.

### FRESHMAN ADMISSION REQUIREMENTS

In order to be considered for admission to Lawrence Tech as freshmen, students must submit the following:

1. Completed Application for Undergraduate Admission
2. Application Fee (non-refundable)
3. Official high school or GED transcripts  
Students still attending high school when accepted to Lawrence Tech must make arrangements to have the final official copy of their transcripts sent to Lawrence Tech's Office of Admissions upon graduation.
4. Official copy of either American College Test (ACT) or Standard Achievement Test (SAT) scores.  
Send the scores to Lawrence Tech, school code 2020.
5. Essay
6. Letter of recommendation
7. Portfolio (Transportation Design, Industrial Design, and Game Art majors only)

Note that students who submit examination scores for Advanced Placement (AP) course work or International Baccalaureate (IB) higher-level course work can have this course work reviewed for university credit at Lawrence Tech.

### PLACEMENT EXAMINATIONS

All entering freshmen must take placement examinations appropriate for their majors. Examination topics include biology, chemistry, computer literacy, English, mathematics, and physics.

Transfer students are required to take placement exams in areas in which they do not have transfer credit. Placement exams are taken prior to attending the Orientation and Registration program. Upon acceptance into the University students will be sent information concerning any required placement exams. For further information about the exams, contact the Office of Admissions, 248.204.3160.

### PREREQUISITES

(Basic Studies)

# Lawrence Technological University

High school graduates and transfer students who meet admissions requirements but lack adequate proficiency in courses basic to their chosen degree may be admitted subject to the satisfactory completion of appropriate Basic Studies courses. College-level courses in intermediate algebra/geometry, college algebra, trigonometry, chemistry, physics, biology, computer applications, and English are available for this purpose. These courses do not provide credit toward most degree programs offered at Lawrence Tech. A student's enrollment in certain courses is restricted until Basic Studies courses have been satisfactorily completed.

## TRANSFER STUDENT ADMISSION REQUIREMENTS

In order to be considered for admission to Lawrence Tech, transfer students must submit the following:

1. Completed Application for Undergraduate Admission
2. Application Fee (non-refundable)
3. Official transcripts from each previously attended institution, including high school
4. Essay
5. Letter of recommendation
6. Portfolio (Transportation Design, Industrial Design, and Game Art majors only)

Lawrence Tech has entered into agreements with several area community colleges that establish which community college courses may be applied toward a Lawrence Tech degree. Lawrence Tech will grant admission to students who complete the specified community college associate degree program and will award the prescribed degree to students who complete the Lawrence Tech courses listed in such an agreement and who otherwise meet graduation requirements.

Transfer students pursuing a baccalaureate degree are expected to complete a minimum of 60 hours of junior- and senior-level course work, a minimum of 30 hours of which must be taken at Lawrence Tech.

## Undergraduate Transfer Credit Procedure

The University will accept courses with a grade of 2.0 or better from regionally accredited community colleges and four-year colleges and institutions, as well as others approved by Lawrence Tech. To receive credit for the Core Curriculum, students will be expected to demonstrate competencies in the following categories:

- a) communications beyond basic English composition
- b) knowledge of the humanities
- c) knowledge of the social sciences
- d) mathematics
- e) science, including a laboratory science

If the total number of semester hours for approved courses in each category of competency is less than the total required by Lawrence Tech, the student will be required to take additional Core Curriculum courses at Lawrence Tech to fulfill the requirement.

All Lawrence Tech students, including those certified to have met Core Curriculum requirements elsewhere, must complete an upper-division course in language and literature or social science as part of their bachelor's degree program. In those cases where a Core Curriculum course is required as a prerequisite for courses in the major, the prerequisite must be completed even if the Core Curriculum requirement is otherwise met. The accreditation specifications of a particular professional degree may require students to complete additional depth and breadth course work in the Core Curriculum.

## Lawrence Technological University

Transfer students will have their official transcripts evaluated and receive a credit evaluation prior to their enrollment. The credit evaluation lists all courses required for a specific degree program in accordance with guidelines provided by the pertinent college for the student's major and the College of Arts and Sciences for the Core Curriculum component. All courses listed are required unless transfer credit has been granted or the student has been excused. If excused from a course, the student will receive an "EX," which will appear in the Credit Hours Transferred column of his or her Program Sheet, and the student must complete the same number of credit hours in another course acceptable to his or her academic advisor.

For courses in progress at the time of acceptance, students must request that official transcripts be sent to the Lawrence Tech Office of Admissions upon their completion.

### **Additional Transfer Credit**

All transfer credits are subject to review by the department chair or dean of the pertinent college. Questions concerning credit evaluations must be resolved by the Office of Admissions within the first semester of enrollment. Any appeal for additional credit must be submitted to the registrar for review by the Credit Review Committee.

### **ROTC/Military Transfer Credit**

Credit earned in the Reserve Officers Training Corps and credit for military training may be applied toward degree work in several Lawrence Tech programs and will be considered according to the recommendations of the American Council on Education. Contact the Office of Admissions for additional information.

### **Other Forms of Additional Transfer Credit**

High school students may earn credit by achieving satisfactory results on Advanced Placement examinations (AP) or International Baccalaureate (IB) higher-level (HL) exams.

Credit may also be obtained by taking subject examinations offered through the College Level Examination Program (CLEP). CLEP information is available through local libraries and the Office of Admissions.

Courses offered by non-collegiate organizations will be considered for credit only if they have received credit recommendation from the National Program on Noncollegiate Sponsored Instruction (National PONSI). Transfer credit will be considered on an individual basis. In all cases, students are required to demonstrate that they had the appropriate academic preparation for the non-collegiate course at the time it was taken.

No more than 30 semester hours of credit will be accepted from the sources listed above. A request for credit from these sources must be resolved with the Office of Admissions within the first semester of enrollment. Credit for PONSI and military courses will not be shown on the students' transcript until all other requirements for a degree have been met. Students will not receive credit from the above sources if the work is carried out while they are enrolled at Lawrence Tech or during the summer between terms of enrollment. Any exceptions will require prior written permission of the Credit Review Committee.

# Lawrence Technological University

## GUEST STUDENT ADMISSION REQUIREMENTS

In order to take classes at Lawrence Tech, guest students must submit the following:

1. Completed Michigan Uniform Guest Application from the institution in which the student is enrolled that specifies the courses to be taken and includes the approval and official seal of the academic advisor and/or registrar.
2. Unofficial transcripts (high school transcripts or other college transcripts may be required if any required prerequisite was taken at an institution other than the one in which the student is currently enrolled).

Students not currently enrolled in collegiate programs must apply as transfer, freshman, graduate, or as non-degree-seeking students. Guest students are allowed to enroll in specific courses for which all prerequisites have been met. Lawrence Tech students have enrollment preference over guest students.

## NON-DEGREE STUDENT ADMISSION REQUIREMENTS

Undergraduate students who elect to take courses but who do not wish to pursue a degree may enroll as a non-degree-seeking student by submitting the following to the Office of Admissions:

1. Completed Application for Undergraduate Admission
2. Application Fee (non-refundable)
3. Unofficial copies of transcripts from institutions attended (high school transcripts may also be required)

Non-degree student status will be granted for two semesters only. A non-degree student who wishes to obtain regular admission to an undergraduate program must reapply and complete the Application for Undergraduate Admission and meet all regular admissions requirements. Non-degree students may not be dual enrolled as degree-seeking students.

Credit for courses taken while a non-degree student may be applied toward a degree if approval is obtained as part of the admissions process. When courses taken as a non-degree student are applied toward a degree, the cumulative GPA will be computed from all undergraduate courses taken at Lawrence Tech.

## DUAL-ENROLLED HIGH SCHOOL STUDENTS

High school students who wish to take classes at Lawrence Tech before graduation must have approval from their high school principal and Lawrence Tech's Office of Admissions and submit the following:

1. Completed Application for Undergraduate Admission
2. Application Fee (non-refundable)
3. Official high school transcripts
4. Completed Lawrence Tech Application Supplement for High School Students (download at [www.ltu.edu/futurestudents/freshman/hsdual.asp](http://www.ltu.edu/futurestudents/freshman/hsdual.asp) or request from the Office of Admissions).

# Lawrence Technological University

## INTERNATIONAL STUDENT ADMISSION REQUIREMENTS

International students are encouraged to apply for admissions early. The following items must be submitted to the Office of Admissions at least 90 days before the desired semester of enrollment:

1. Completed Application for Undergraduate Admission signed by the student
2. Application Fee (non-refundable)
3. Certified true copies of original academic transcripts and an authorized English translation when necessary. Any and all college or university transcripts must be submitted to World Education Services (WES) for a course-by-course evaluation. Visit [www.wes.org](http://www.wes.org) for important information.
4. Evidence of English proficiency. Students with a minimum score of 450 on the paper-based TOEFL may be allowed to enroll in part-time academic courses while concurrently taking English as a Second Language courses. Students with a minimum score of 550 will be allowed to enroll in all academic courses. Students with a score less than a 450 are required to enroll in English as a Second Language courses before taking any academic courses.
5. Affidavit of Support (for F-1 visa holders)
6. Completed F-1 visa Transfer Form (for F-1 students transferring from a U.S. college or university)
7. Home country address
8. Completed Document of Support Verification Form (download at [http://www.ltu.edu/futurestudents/international/obtaining\\_i20.asp](http://www.ltu.edu/futurestudents/international/obtaining_i20.asp) or obtain from the Office of Admissions).

## TRANSFERS WITHIN THE UNIVERSITY/INTERRUPTION OF STUDIES

An interruption of studies occurs when a student does not attend classes for a full semester or more without special permission. Readmission is not automatic; the admission policies, curricula, and requirements of the academic programs at the time of readmission will apply.

Students who have interrupted their studies for more than three calendar years must submit a new Application for Undergraduate Admission to the Office of Admissions and will be subject to the curricula and requirements of the chosen program upon their return.

Students may reapply through Enrollment Services/Office of the Registrar if they are:

1. Returning within three calendar years
2. Academically eligible to return
3. Returning to an undergraduate degree program

Students must reapply through the Office of Admissions if they are:

1. Returning after more than three calendar years
2. Beginning a new degree program after graduation from Lawrence Tech
3. Academically ineligible to return (suspended, dismissed). In this case the student must also seek readmission from the Academic Standing Committee.

## CHANGE OF MAJORS

Currently enrolled students desiring to change majors within their college (example: mechanical engineering to electrical engineering) do not need to reapply for admission. Students should contact the dean of their college and submit the appropriate change of curriculum form to Enrollment Services/Office of the Registrar.



# **Lawrence Technological University**

## **RETURNING ALUMNI**

Alumni seeking another degree must submit a completed Application for Undergraduate Admission to the Office of Admissions and must meet normal admission requirements. The application fee is waived.

## **ADMISSIONS ADVISING AND TOURS**

The Office of Admissions is open year-round (except holidays). Admissions counselors are available on a walk-in basis on weekdays. Students are encouraged to contact the Office of Admissions with any questions. Students wishing to schedule a tour of campus should call 248.204.3160 or 800.225.5588.

## Tuition and Fees

Lawrence Technological University sets tuition rates with the one goal of providing students with the best possible learning experience. The emphasis is on quality. Concurrently, the University has a long tradition of prudent management that has allowed it to contain costs and provide students with extraordinary value for their tuition investment, but never at the expense of Lawrence Tech's primary emphasis.

Tuition at Lawrence Tech is used to cover many of the costs associated with a student's learning experience. Remaining expenses are funded through support from the University's alumni and friends, including gifts from individuals, corporations, and foundations.

Tuition and fees are normally established on an annual basis. However, the University reserves the right to make changes in these charges or to initiate or delete charges without notice. The schedule of current tuition and fees is published separately from this Catalog and is available [at http://www.ltu.edu/registrars\\_office/tuition\\_fees.index.asp](http://www.ltu.edu/registrars_office/tuition_fees.index.asp) or from Lawrence Tech's Offices of Admissions, Business Services, or Enrollment Services/Registrar.

### **PAYMENT OF TUITION AND FEES**

Tuition and fees are due in two installments each semester. If full payment cannot be made by the deadline, the following options are available:

1. Enroll in Tuition Management Systems, which provides for making monthly payments
2. Provide Billing Authorization Forms (Tuition Vouchers) when the student's employer is to be invoiced by the University
3. Apply for student financial aid. Consideration is granted on estimated eligibility and is subject to application timing and accuracy. Students are fully responsible for any charges that are not covered by financial aid.

The options stated above are available only when all prior balances have been paid in full. Monthly late charges will be assessed on all accounts with past due balances. Transcripts, diplomas, and/or permission to register will not be issued if an outstanding balance appears on a student's account.

### **METHOD OF PAYMENT**

Students can make payments on their accounts using any of the following methods:

1. Pay with cash, check, money order, or credit card at the DTE Energy One-Stop Center in the A. Alfred Taubman Student Services Center
2. Mail a check, money order, or appropriate credit card information
3. Phone (248.204.2280) or fax (248.204.2229) appropriate credit card information to the One-Stop Center
4. Use a credit card via BannerWeb at [my.ltu.edu](http://my.ltu.edu).
5. Via the drop box located to the side of the entrance to the DTE Energy One-Stop Center

### **COSTS FOR WITHDRAWAL**

Costs for withdrawal are established as stipulated by federal regulations. The date credit for withdrawal will be received can be obtained from Enrollment Services/Office of the Registrar.

# Lawrence Technological University

A full tuition refund will be granted for all drops completed within the Drop/Add period. Official Drop/Add period dates for each semester are available at [www.ltu.edu/registrars\\_office/calendar\\_final\\_exam.index.asp](http://www.ltu.edu/registrars_office/calendar_final_exam.index.asp).

After the Drop/Add period, no refunds are provided. Registration fees, activity fees, graduation fees, and course fees are non-refundable and are not included in the withdrawal credit calculation. Balances remaining after the drop adjustments must be paid based upon the University policy for payment of tuition and fees. Credit balances will be refunded.

The semester begins on the first day of classes as listed in this *Catalog*, unless otherwise indicated.

The date of withdrawal is the date the student's drop form is validated by Enrollment Services/Office of the Registrar, the postmark date of the letter of withdrawal, or the date the student completes the withdrawal on BannerWeb at [my.ltu.edu](http://my.ltu.edu).

**All students withdrawing from classes may have their financial aid eligibility adjusted or canceled for the semester and will be subject to Lawrence Tech's federal Return to Title IV and Satisfactory Academic Progress policies. For additional information, see Financial Aid in this *Catalog*.**

## STUDENT TUITION APPEAL PROCESS

Students who seek to drop classes after the tuition refund deadline and wish to receive a refund of any type or to have the late registration or the late transaction fee waived, should submit a Tuition and Fee Appeal Form to Enrollment Services/Office of the Registrar, along with a letter explaining the rationale for the request. All supporting documentation should be submitted at this time (e.g., documentation of a medical issue). The appeal will not be accepted or reviewed without all information in hand.

The registrar will prepare a packet of information for the Appeals Committee that includes the student's current semester schedule, the tuition statement for the current and previous semesters, a list of the student's courses and grades, and the student's financial aid status. The Appeals Committee (composed of the registrar, dean of students, director of financial aid, director of admissions, and supervisor of student accounting) reviews each student request and makes a determination as to whether to grant an exception to University policy. The committee may also contact the student's instructor(s) to inquire about the student's attendance record and current grade in the course. The registrar then sends a letter to the student with the decision.

Students should be aware that if an exception is made, the amount of their financial aid may be impacted and in some circumstances they may potentially owe the University money.

It is important to note that exceptions to University policy are made only in rare circumstances, such as a debilitating illness. Requests made because of difficult work schedules or class schedules will not be considered.

## FINANCIAL AID

The Office of Financial Aid, as a division of Enrollment Services, can be contacted at the DTE Energy One-Stop Center (248.204.2280) in the A. Alfred Taubman Student Services Center. Approximately two-thirds of all students at Lawrence Tech receive some form of financial aid. Grants, scholarships, loans (types and amounts), and work-study eligibility vary by student, depending on need, merit or ability, and availability of funds. All students are encouraged to complete the Free Application for Federal Student Aid (FAFSA) by

## Lawrence Technological University

March 1 and provide all requested documentation by April 1 every year to avoid potential processing delays. All awards are offered based on a first-come, first-served basis.

For additional information on federal, state, and institutional aid programs and instructions on how to apply, visit the financial aid website at [www.ltu.edu/financial\\_aid](http://www.ltu.edu/financial_aid). Most initial awards are based on the assumption of full-time attendance (12 or more credit hours for undergraduate and six or more for graduate students). All awards will be adjusted for part-time attendance and disbursed proportionally, depending on whether a student attends three-quarter-time (nine, 10, or 11 credit hours for undergraduate, and five credit hours for graduate students) or half-time (six, seven, or eight credit hours for undergraduate, and three or four credit hours for graduate students). Most students are not eligible for financial aid if attending less than half-time (less than six credit hours for undergraduate, and less than three credit hours for graduate students).

All awards will be reviewed and revised, if necessary, following the Add/Drop period each semester. Students who withdraw from all classes for the semester are subject to a recalculation of their award eligibility. All students who have been awarded financial aid should consult the Office of Enrollment Services at the DTE Energy One-Stop Center ([enrollment@ltu.edu](mailto:enrollment@ltu.edu) or 248.204.2280) before dropping or withdrawing from classes. Students will receive a revised award notice showing all adjustments in financial aid eligibility.

Financial aid disbursements will be posted to student accounts and finalized shortly after the Add/Drop period. Refundable balances of excess financial aid will be processed accordingly, based on the wishes of each student. Please contact the Office of Enrollment Services at the DTE Energy One-Stop Center to discuss refunding options.

All financial aid recipients are subject to Satisfactory Academic Progress policies as stated at [www.ltu.edu/financial\\_aid/sap\\_policy.asp](http://www.ltu.edu/financial_aid/sap_policy.asp).

Guest, non-degree, and international students are not eligible for most financial aid programs.

For a list of financial aid opportunities available, please contact the Office of Enrollment Services at the DTE Energy One-Stop Center ([enrollment@ltu.edu](mailto:enrollment@ltu.edu) or 248.204.2280).

### VETERANS

Questions regarding benefits under the GI Bill, Michigan National Guard educational benefits, or any funding related to veterans should be directed to Lawrence Tech's Office of Financial Aid ([enrollment@ltu.edu](mailto:enrollment@ltu.edu) or 248.204.2280). Veterans may also contact the U.S. Department of Veterans Affairs ([www.gibill.va.gov](http://www.gibill.va.gov)) with questions concerning program eligibility. Veterans Affairs provides a wide range of benefits to veterans. New programs have made some reservists and active duty personnel eligible for benefits.

The monthly allowance for Lawrence Tech veterans is based on the number of credit hours, the number of dependents, and enrollment in a qualified program according to Veterans Affairs guidelines. All veterans receiving GI benefits are expected to maintain Satisfactory Academic Progress (see [www.ltu.edu/financial\\_aid/sap\\_policy.asp](http://www.ltu.edu/financial_aid/sap_policy.asp) for details).

## **Lawrence Technological University**

Veterans Affairs regulations permit only a two-semester probation period unless there are mitigating circumstances as determined by Veterans Affairs. The University will inform Veterans Affairs and the student when the student does not meet academic standards of progress and is no longer eligible for benefits.

## Financial Aid

Financial assistance at Lawrence Tech is granted without regard to an applicant's race, sex, color, age, handicap, marital status, or national or ethnic origin. Both new and enrolled students interested in federal, state, and institutional financial aid programs are strongly encouraged to complete the Free Application for Federal Student Aid, otherwise known as FAFSA. The primary application piece required for federal, state, and institutional financial aid consideration, the FAFSA can be completed online at [fafsa.ed.gov](https://fafsa.ed.gov); it is also accessible at [www.ltu.edu/financial\\_aid/federal\\_aid.index.asp](http://www.ltu.edu/financial_aid/federal_aid.index.asp).

The FAFSA must be completed annually; applications for aid commencing in the fall semester can be submitted no earlier than January 1 of the same year. To maximize their chance of receiving financial aid, students should complete the FAFSA no later than March 1. In order to provide accurate income, tax, and asset information, students and parents should, if possible, move their appointment with their tax preparer to early February.

All financial aid applications will be processed, and eligibility will be established, based on the availability of funds. Also, some students are selected for a review process called Verification. Verification requires that students and parents provide tax returns and other important information prior to the review of their application. If students are selected for Verification, they will be notified by the school that they must provide the needed information. This information should be delivered or mailed to the DTE Energy One-Stop Center in the A. Alfred Taubman Student Services Center by April 1 for early consideration. All information provided after April 1 will be reviewed and processed but will be considered late.

Students must provide accurate and timely information and documentation to make the application review and awarding processes as smooth as possible. Generally speaking, it can take between two and six weeks from the time the FAFSA is submitted to the time an award notice is prepared and sent.

New students at Lawrence Tech are notified of their financial aid awards beginning in April. Returning students are notified of their awards beginning in May.

Lawrence Tech's Office of Financial Aid, a division of Enrollment Services, assists both new and enrolled students with financial planning and financial aid processing. There are many sources and types of financial aid, including various private, state, and federal programs, and the Office of Financial Aid can help students identify appropriate ways to meet their educational costs. Approximately two-thirds of the University's students receive some form of financial assistance, which totals more than \$42 million annually – some \$16 million in outright grants and scholarships and \$26 million in low-interest loans. And, there are many students who benefit from federal and state work-study opportunities that allow them to earn a paycheck and gain valuable work experience.

Good students should not be dissuaded from pursuing a quality Lawrence Tech education because they assume it is beyond their means. Students should visit [www.ltu.edu/financial\\_aid](http://www.ltu.edu/financial_aid) for up-to-date financial aid information and links to scholarship search websites. Students should contact the DTE Energy One-Stop Center at 248.204.2280 or [enrollmentservices@ltu.edu](mailto:enrollmentservices@ltu.edu) if they have any questions regarding the financial aid application process or status.

### **STATE TUITION GRANTS AND SCHOLARSHIPS FOR MICHIGAN RESIDENTS**

Lawrence Tech students in need of financial aid have a special opportunity for assistance through the State of Michigan Tuition Grant program, which is exclusively for students attending independent

## Lawrence Technological University

Michigan colleges. Lawrence Tech students may receive outright grants of \$100 to \$1,512 toward tuition each year, depending upon their need and the availability of funds.

The state also has a scholarship program, the Michigan Competitive Scholarship, for students enrolled in public or private Michigan colleges. Michigan Competitive Scholarships are awarded on the basis of American College Test (ACT) scores and demonstrated financial need.

### Requirements

To qualify for a Michigan Tuition Grant or a Michigan Competitive Scholarship, an applicant must be a U.S. citizen or an eligible non-resident; must have been a continuous Michigan resident since July 1 (of the previous year); and must be a student attending at least half-time (a minimum of six hours).

### How to Apply

To apply, a student should follow the instructions at [www.ltu.edu/financial\\_aid/state\\_tuition\\_grants.index.asp](http://www.ltu.edu/financial_aid/state_tuition_grants.index.asp) and complete the Free Application for Federal Student Aid (FAFSA) at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). Be sure to list Lawrence Tech as first school of choice on the FAFSA for priority consideration.

### Deadlines

To receive maximum consideration for these state funds for the fall semester, students should complete the FAFSA by early spring. Currently, the deadline for Michigan Competitive Scholarship consideration is March 1 every year. Students are encouraged to file early in order to know their financial aid status well in advance of the fall semester. However, all late applications will be considered, depending on the availability of funds.

### LAWRENCE TECH ACADEMIC SCHOLARSHIPS

Lawrence Tech prides itself on providing a large number of scholarships, ranging from partial to full tuition, to new students. All students who have been accepted for undergraduate study at Lawrence Tech are automatically eligible for scholarship review. The Office of Admissions determines eligibility for freshman students based on a combination of the students' high school grade point average and ACT/SAT test scores. Lawrence Tech also provides scholarship opportunities for transfer students. In order for transfer students to be eligible, they must have a GPAs of 3.0 or higher.

To assure that all students receive maximum consideration for all types of financial aid, completion of the financial aid application process is recommended.

Students will be notified in writing of their eligibility and the terms and condition of each scholarship. Most scholarships have a maximum eligibility period of four years, or eight semesters, and require full-time attendance. The Pre-eminent scholarship awarded to transfer students has an eligibility period of two years or four semesters. All students are expected to meet the academic requirements of each scholarship received, and all scholarships are renewable. The Office of Financial Aid reviews each scholarship recipient's GPA and determines their continued eligibility. Lawrence Tech also offers a variety of one-semester scholarships that are only renewable by application.

For the most recent detailed listing of all Lawrence Tech scholarships, go to [www.ltu.edu/financial\\_aid](http://www.ltu.edu/financial_aid). No additional application is required to be considered for scholarships. To be eligible, students must be admitted to Lawrence Tech and have on file a completed admissions application that includes official transcripts.

# Lawrence Technological University

It is recommended that students complete admission applications prior to March 1 for freshman and June 15 for transfer students. Scholarships will be awarded on a rolling basis; funding is limited, and awards will cease when funding has been depleted.

## Wayne H. and Vita S. Buell Honor Scholarships

Through a bequest from Lawrence Tech's third president and his wife, a limited number of full tuition scholarships with a book stipend are offered to outstanding students entering the University for the first time. Candidates must be in the top 5 percent of their high school graduating class. Scholarships are awarded each year on a competitive basis.

## Lawrence Tech Scholarships

Lawrence Tech offers a limited number of \$13,000 to \$18,000 annual scholarships to first-time students who are high school graduates with a GPA of 3.5 or higher and an ACT test score of 26 or higher. Transfer students with exceptional transfer credit and grade point average of 3.8 or higher also may qualify.

## University Honor Scholarships

Lawrence Tech annually awards more than 250 University Honor Scholarships for \$10,000 per year to first-time students who qualify with a GPA of 3.3 or higher and an ACT composite of 25 or higher. The scholarship is given for eight semesters if the student maintains a 2.7 cumulative GPA or higher.

Transfer students are also eligible for University Honor Scholarships provided they transfer a minimum of 24 hours with a GPA of 3.6 or higher. The \$10,000 per year scholarship is given for eight semesters if the student maintains full-time student status and a GPA of 2.7 or higher.

## Lawrence Tech Trustee Scholarships

Lawrence Tech annually awards an unlimited number of \$6,000 per year Trustee Scholarships to first-time students who have a GPA of 3.0 or higher and an ACT composite of 24 or higher. The scholarship is given for eight semesters if the student maintains a cumulative GPA of 2.7 or higher.

Transfer students are also eligible for Trustee Scholarships and must transfer a minimum of three hours with a GPA of 3.0 or higher to qualify. The award is \$4,500 per year for full-time students and \$1,500 per year for part-time students, and it is given for eight semesters if the student maintains an enrollment of at least six credit hours and a GPA of 2.7 or higher.

## UPPERCLASS SCHOLARSHIPS FOR CONTINUING UNDERGRADUATE STUDENTS

Through the generosity of friends and alumni of Lawrence Tech, in association with the efforts of the Office of University Advancement, there is a growing list of donor-funded scholarships available to undergraduate students demonstrating outstanding academic accomplishment at Lawrence Tech. All continuing undergraduate students who have successfully completed at least 24 credit hours may apply for upper-class scholarships. Upper-class scholarship applications, available from the Scholarship Committee chairperson, the DTE Energy One-Stop Center, and online at [www.ltu.edu/financial\\_aid](http://www.ltu.edu/financial_aid), must be received before May 15 for scholarship opportunities beginning the following fall. Recipients enrolled in baccalaureate programs must have sophomore, junior, or senior standing to qualify. Find a complete listing of upper-class scholarships at [www.ltu.edu/financial\\_aid](http://www.ltu.edu/financial_aid).



# Lawrence Technological University

## LOANS FOR STUDENTS

### Federal Direct Stafford Loans

The Federal Direct Stafford Subsidized and Unsubsidized Loan programs carry both annual and cumulative (lifetime) limits. Your SAR (Student Aid Report) lists your cumulative loans, but it is important that you also keep records of all your loan transactions. You can also look up your loan history online at [www.nslds.ed.gov](http://www.nslds.ed.gov).

**It is very important to complete the FAFSA every year. All federal loans must be accepted and originated one month prior to the end of the semester or period of enrollment to allow adequate time for processing and disbursement of funds.**

***Federal Direct Subsidized Stafford Loan*** – Students must demonstrate financial need to qualify for the Subsidized Stafford loan. The federal government pays the interest on a Subsidized Stafford loan while the student is attending college at least half-time. When students graduate, drop below half-time, or withdraw from their academic programs, they will receive a six-month grace period before repayment begins. Depending on when the student’s loan was disbursed, the interest rate can be fixed or variable. Visit [www.ltu.edu/financial\\_aid](http://www.ltu.edu/financial_aid) for further information.

***Federal Direct Unsubsidized Stafford Loan*** – Students are responsible for the interest on an Unsubsidized Stafford loan while in college. Payment options can be viewed at [www.federalstudentaid.ed.gov](http://www.federalstudentaid.ed.gov). Students who do not demonstrate need may qualify for the Unsubsidized Stafford loan.

### Stafford Maximums Per Year

Student Level and Dependency Status	Maximum Stafford (subsidized and unsubsidized)	Maximum Subsidized
Dependent freshman	\$5,500	\$3,500
Dependent sophomore	\$6,500	\$4,500
Dependent junior or senior	\$7,500	\$5,500
Independent freshman	\$9,500	\$3,500
Independent sophomore	\$10,500	\$4,500
Independent junior or senior	\$12,500	\$5,500
Graduate/professional	\$20,500	0

### Lifetime Limits

# Lawrence Technological University

<b>Student Level and Dependency Status</b>	<b>Maximum Stafford</b>	<b>Maximum Subsidized</b>
	(subsidized and unsubsidized)	
<b>Dependent undergraduate</b>	\$31,000	\$23,000
<b>Independent undergraduate</b>	\$57,500	\$23,000
<b>Graduate/Professional</b>	\$138,500*	\$65,500*

**\*The graduate debt limit includes loans received for undergraduate study. Beginning with the 2012–13 academic year, graduate students are no longer eligible for Federal Direct Subsidized Stafford loans.**

If students reach their lifetime loan limit, they cannot receive any more of that type of loan. If a student exceeds his or her limit, aid already disbursed will be returned to the lender by Lawrence Tech or may have to be repaid by the student. Students are encouraged to borrow only what they need for educational expenses and to keep track of their cumulative debt. Alternative lending may be an option if a student needs additional loan funding to continue his or her education.

## **Federal Direct PLUS Loans**

There are two types of Federal PLUS loans. One is the PLUS Loan for parents, which allows parents of dependent students to borrow up to the cost of their college attendance minus estimated financial aid from other sources. The other is the PLUS Loan for graduate students, which allows students to borrow up to the cost of their attendance minus other estimated financial aid. Both loan programs are subject to determinations of credit worthiness, and there are fixed and variable interest rates depending on when the loan was or is disbursed. Repayment typically begins 60 days after disbursement, but students can apply for a deferment. Visit [www.studentaid.ed.gov](http://www.studentaid.ed.gov) for additional information.

## **Federal Perkins Loans**

Under this federal program, students may borrow up to \$4,000 each year up to a total of \$20,000 for an undergraduate program. Students must show need for financial aid as determined by the results of the FAFSA. Repayment terms and conditions can be viewed at [www.studentaid.ed.gov](http://www.studentaid.ed.gov).

## **GRANTS FOR STUDENTS**

### **Federal Supplementary Educational Opportunity Grants (FSEOG)**

This federal program awards grants ranging from \$100 to \$4,000, depending on availability of funds, to students who demonstrate financial need. Students receiving Pell grants have first priority for FSEOG funds.

### **Federal Pell Grant**

Maximum grant eligibility for each student is \$5,645 annually and funds are available only for undergraduate students. The application for the Pell Grant is the Free Application for Federal Student Aid (FAFSA), which is used to determine the family contribution and need for the Pell Grant. The amount of Pell Grant funds students may receive over their lifetime is limited by a new federal law to be the equivalent of six years of maximum annual Pell Grant funding.

## **WORK-STUDY PROGRAMS**

## Lawrence Technological University

The Federal Work-Study Program is designed to help students pay for their education by providing opportunities for them to be employed and earn a paycheck during the semester. Students may work on campus in any capacity, such as in academic departments, administrative offices, libraries, or in landscaping and maintenance. A student must demonstrate financial need as determined by completion of the FAFSA to be eligible for the work-study programs. Contact the Office of Career Services at 248.204.3140 for a listing of available work-study positions.

For information on the Federal Work-Study program, visit [www.studentaid.ed.gov](http://www.studentaid.ed.gov).

### **JOB PLACEMENT SERVICE**

The Office of Career Services maintains a list of available part-time and full-time jobs with businesses and industries seeking candidates from Lawrence Tech. Opportunities are posted on CareerQuest ([www.ltu.edu/career\\_services/careerquest.asp](http://www.ltu.edu/career_services/careerquest.asp)).

### **COOPERATIVE EDUCATION**

Students in the traditional co-op program (alternating every other semester between work and school) and receiving some form of financial aid or scholarship typically receive their financial aid awards once they return to campus on a full-time basis, depending on whether or not they are enrolled in other classes during the semester of co-op.

Students on the parallel program can potentially receive financial aid during their co-op provided they are attending at least half-time (six credit hours) each semester.

Students should speak with a financial aid counselor for further information regarding their scholarships, loans, or other financial aid while on co-op.

Informally and apart from the formal co-op program, many students in all disciplines work full- or part-time while attending classes. Lawrence Tech's day, evening, and online course offerings provide considerable flexibility to students who seek concurrent employment. While students may learn of particular job opportunities through such sources as the Office of Career Services, students are individually responsible for working out an acceptable attendance schedule with their employer.

### **ADDITIONAL FINANCIAL AID INFORMATION**

#### **Basis for Awards**

Students with the greatest need, as determined by standard federal methodology (resulting from completion of the FAFSA), receive the highest consideration for need-based funding depending on the availability of funds and the timing of the application. Students meeting published application deadlines will have a greater chance of receiving preferred types of financial aid funds.

#### **Basic Costs**

Personal expenses for room, board, clothing, recreation, laundry, travel, books, and incidentals vary according to individual lifestyle. An estimate for the total cost of a student's education can be made by adding tuition and fees to these items. The Office of Financial Aid provides an estimated cost of attendance at [www.ltu.edu/financial\\_aid/estimate.asp](http://www.ltu.edu/financial_aid/estimate.asp). This can be used to determine eligibility for need-based funding. Cost minus the Expected Family Contribution (EFC) is the basis for determining the need for financial aid. The EFC is calculated based on the information provided on the FAFSA each year.

#### **Satisfactory Academic Progress**

# Lawrence Technological University

All students receiving financial aid are expected to maintain satisfactory academic progress. Undergraduate students receiving any type of financial aid must maintain a grade point average of at least 2.0 after completing the first two semesters or risk losing their financial aid eligibility for the next semester of attendance. The academic progress of financial aid recipients will be monitored a minimum of once each academic year. Students with questions regarding the intent and interpretation of this policy should contact the Office of Financial Aid.

Students are also expected to make normal progress toward graduation by completing at least 67 percent of all attempted credit hours. Students who withdraw from or drop one-third or more of the courses in which they have enrolled during the year will not meet the standards of academic progress for financial aid consideration.

In addition, students will not be eligible for aid once they have attempted 150 percent of the total number of credit hours required to complete their program of study. Students should consult their academic advisor to determine the appropriate course load to assure academic success and completion of their degree within the specified number of credit hours.

Contact the DTE Energy One-Stop Center or visit [www.ltu.edu/financial\\_aid/sap\\_policy.asp](http://www.ltu.edu/financial_aid/sap_policy.asp) for information regarding the appeal and renewal procedure when standards of progress are not met.

## **Defaulted Student Loans**

Students who have defaulted on student loans, owe a refund on a grant, or owe college tuition will not be eligible for any financial aid until the obligation is fulfilled and monies are paid back to the University, the federal government, the state government, or the lender of interest.

## **Verification of Financial Statement and Other Application Information**

Lawrence Tech reserves the right to request federal IRS income tax documentation from its students, along with a verification form for the entire family for the financial information provided. Students refusing to provide family income tax or other documentation information will be denied financial aid. For families who are not required to file a federal tax form, other types of verification will be required.

## **Financial Aid and Credit Hour Reduction**

Financial aid may be reduced or canceled if a student takes less than 12 credit hours per semester. Award amounts for need-based financial aid are based on the number of credit hours attempted and a student's demonstrated financial need. Students planning to drop all or part of their classes should contact the DTE Energy One-Stop Center to discuss the effects on their financial aid awards for the semester.

## **Refunds of Excess Financial Aid**

When financial aid and other payments exceed a student's charges, the student is entitled to a refund. Student Accounting will refund excess financial aid to the student, parent, or other payment source within 14 days of the posting of a credit balance. A check will be mailed to the current mailing address on file, or students can elect to have the check directly deposited.

## **Cancellation of Loan**

Federal Stafford, Federal PLUS, and Federal Perkins loan borrowers have the right to cancel their loan disbursements within 14 days of the disbursement notice. Should students decide to cancel the disbursement of their federal loans, they should contact the DTE Energy One-Stop Center at [enrollmentservices@ltu.edu](mailto:enrollmentservices@ltu.edu) in writing within the specified time period. By canceling the disbursement,

## Lawrence Technological University

students will be responsible for any unpaid tuition and fees, as well as repayment of loan funds already paid to them.

### Enrollment Status

All initial awards are based on full-time status. Grant awards will be prorated for enrollment of less than full-time, and student loan eligibility will be reevaluated and may change due to changes in enrollment status. Students must be enrolled in an eligible degree program, and most funds require at least half-time (for undergraduate students, six or more credit hours, and for graduate students, three or more credit hours) enrollment status. Student awards are subject to change due to changes in enrollment status and/or funding levels at any time.

### Adjustments to Aid

Within certain time limits, tuition adjustments may be made to the student's financial account. There are times, however, when students receive no tuition credit/refund for dropped courses. See the Tuition and Fees section of this *Catalog* or visit [www.ltu.edu/registrars\\_office/tuition\\_fees.index.asp](http://www.ltu.edu/registrars_office/tuition_fees.index.asp). It is the students' responsibility to know these dates and adhere to them.

### Withdrawal from Lawrence Tech

Students may be billed for a portion or all of their incurred charges if they withdraw from the University. The bill calculated as a result of withdrawal will depend on the effective date of the withdrawal, the percentage and amount of institutional refund, and/or the last date of class attendance.

If a student receiving Title IV funds completely withdraws from classes through 60 percent of the term, the University is required to determine how much of the financial aid was earned up to the time of withdrawal ([www.ltu.edu/financial\\_aid/financial\\_aid\\_IVfunds.asp](http://www.ltu.edu/financial_aid/financial_aid_IVfunds.asp)). The University and/or the student must return unearned Title IV funds to the federal government. This situation could result in the student owing aid funds to the University, the government, or both.

Students should always check with the DTE Energy One-Stop Center prior to withdrawal for advice on the impact it will or could have on their financial aid.

### Auditing Classes

Students who audit classes are not eligible to receive financial aid for audited class work.

## Academic Regulations

The policies and procedures described in this *Catalog* determine the academic status of undergraduate students enrolled in the University. Exceptions to these policies and procedures may be considered only upon a written request to the Office of the Provost or the designated/appropriate office. In the case of a lapse of future catalogs, the policies, procedures, and curricula in this *Catalog* will apply to all students. For policies pertaining to graduate programs, see Lawrence Tech's *Graduate Catalog*.

### DEFINITION OF FULL-TIME STATUS

Classification as a full-time student is based upon the weekly academic load that the student carries. Undergraduates are considered full-time when registered for a minimum of 12 credit hours. Full-time status requirements are the same during the summer semester.

### GROUPING OF STUDENTS BY CLASSES

Students in undergraduate programs are classified as follows:

Semester hours completed	
Freshman	0–29
Sophomore	30–59
Junior	60–89
Senior	90+

### CREDIT HOUR

The University converted from a quarter credit system to a semester system, effective beginning in the fall of 1994. Work completed prior to August 1994 is recorded in standard quarter hours. Work completed after August 1994 is recorded in semester hours. Quarter hours can be converted to semester hours by multiplying the number of quarter hours by two-thirds.

### GRADING SYSTEM

A record of grade points is kept in the student's permanent record and is used to determine his or her overall scholastic average. The following grades are computed in the grade point average:

Grade	Points per Credit Hour
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0
WF	0.0 (failure due to non-attendance)

The grades D, D+, and D- are not used in graduate programs and select undergraduate programs.

# Lawrence Technological University

The following grades are not computed in the grade point average:

W	Withdrawal
X	Audit
CR	Credit
NC	No Credit
I	Incomplete
DG	Deferred Grade
NR	No Report
TR	Transfer Credit
IP	In Progress
ZZ	Transfer Courses in Progress

## RECOMPUTATION OF GRADE POINT AVERAGE

The following grades may be repeated and the grade point average recalculated at the undergraduate level: C-, D+, D, D-, and F.

The recalculation of the grade point average is an automated process within Enrollment Services/Office of the Registrar; the student is not required to submit any paperwork.

Until a passing grade is achieved, all grades for earlier attempts in a course will appear on the transcript and will be computed into the grade point average. Once a course has been passed, only the credit hours and grade for the latest attempt will be reflected in the grade point average.

In order for the grade point average to be recomputed, the latest attempt must be in the same course as the one originally shown on the transcript and must be part of the University's normal course offerings. Directed study or special sections may not be used for recomputation purposes.

Students who have been found in violation of the Academic Honor Code receive the grade of F for that course. This grade will not be recomputed for GPA purposes.

The University does not guarantee that a course will be offered in the future. Therefore, students will not be eligible for recomputation of a course no longer offered by the University.

## INCOMPLETE

A grade of "I" is given only under extraordinary circumstances for course work that has been of satisfactory quality and, in the judgment of the instructor and the instructor's dean, adequate to justify a reasonable extension of time. It is assigned only in cases in which the student has completed satisfactorily the major portion of the course requirements. Students receiving an "I" may not attend the class during a succeeding semester. Instructors must change an "I" to a grade other than a "W" no later than one calendar year following the end of the semester. After one year, if course requirements are not met, the "I" will be converted to an "F."

## GRADE CHANGES

The electronic entry of grades submitted by instructors at the end of each semester is the official record of grades. Grade changes, when necessary, are done by the instructor with the approval of the department chair and dean. The registrar may determine that the provost's approval is also required in exceptional or

# Lawrence Technological University

unusual circumstances. Any disputes concerning grades must be resolved within one semester after the course was completed.

## **DISPUTE OF GRADES**

Students who wish to dispute their grades have one semester to address the issue. The appropriate procedure for disputing grades, along with any other aspect of a course, is as follows: The student must first speak with the instructor of the course; if the resolution is not what the student hopes to achieve, the next course of action is to speak with the department chairperson. If the outcome from addressing the issue with the department chair is not what the student hopes to achieve, the student should then address the issue with the dean of the college. If the resolution is not what the student hopes to achieve, the last and **FINAL** course of action is to speak with the provost. The ruling of the provost is **FINAL** and not further disputable by the student.

## **AUDITING CLASSES**

Anyone wishing to audit a course must submit an audit request form along with the regular registration forms. These forms are available in Enrollment Services/Office of the Registrar. No credit is granted for courses that are audited. Starting with the first day of classes, a student may not change enrollment status from audit to credit or from credit to audit. Full tuition will be charged, and the tuition credit policy applies if the student withdraws.

## **WITHDRAWAL FROM CLASSES**

Students who wish to drop or withdraw from a course or courses must do so online through BannerWeb. The date of the drop or withdrawal will be the date that the student completes the process on BannerWeb. To protect students' right to privacy, drops and withdrawals may not be conducted by telephone or email.

Within certain time limits, full tuition adjustments may be made to the student's financial account. There are times when students receive no tuition credit/refund for dropped courses. Official Drop/Add dates for each semester are available online on BannerWeb at [my.ltu.edu](http://my.ltu.edu) and at [www.ltu.edu/registrar\\_office/important\\_dates.index.asp](http://www.ltu.edu/registrar_office/important_dates.index.asp). It is the student's responsibility to know these dates and adhere to them.

It is important to note that exceptions to University policy are made only in rare circumstances, such as a debilitating illness. Requests made because of difficult work schedules or class schedules will not be considered.

Students studying at Lawrence Tech with an F-1 or J-1 visa cannot drop below full-time status without prior approval from the Office of International Programs.

## **GRADES FOR COURSES DROPPED**

Students who drop a course during the first two weeks of classes during the fall or spring semester will receive a "Drop" on their Registration Form and no grade will appear on their transcript.

Students who withdraw from a course before the 13th week of the fall or spring semester but after the first two weeks of classes will receive a grade of "W."

The last day to withdraw from summer semesters and short courses within the regular fall and spring semester is adjusted for the shorter time period as follows:



# Lawrence Technological University

Class Duration Period	Last Day/Week to Withdraw
up to one week	third day
up to two weeks	first week
up to three weeks	second week
up to four weeks	third week
up to five weeks	fourth week
up to six weeks	fifth week
up to seven weeks	sixth week
up to eight weeks	sixth week
up to nine weeks	seventh week
up to 10 weeks	eighth week
up to 11 weeks	ninth week
up to 12 weeks	10th week
up to 13 weeks	11th week
up to 14 weeks	12th week
up to 15 weeks	13th week

After the last date to withdraw for any semester, students will not be permitted to withdraw from the course and will receive a grade as determined by the instructor (not a "W").

Those students who do not attend courses or who miss a designated number of courses, and who do not withdraw from the courses on their own, will be issued the grade of "WF." This means failure due to non-attendance and will impact the student's financial aid award and loans.

All withdrawals or drops must be initiated by student action to assure that a "W" will appear on the master grade roster and subsequent transcripts. Faculty may not initiate withdrawal procedures nor may they submit a "W" on the electronic grade entry unless the student has withdrawn.

Drop and Withdrawal schedules for each semester may be obtained from Enrollment Services/Office of the Registrar and are available at [www.ltu.edu/registrar\\_office](http://www.ltu.edu/registrar_office).

## **SCHEDULE OF CLASSES**

Programs for undergraduate students are outlined in this *Catalog*. Class schedules giving the particular days and the hours of the various classes are made available during registration for each semester online at [www.ltu.edu](http://www.ltu.edu) and on BannerWeb at [my.ltu.edu](http://my.ltu.edu).

## **GRADE REPORTS**

Grades are available online at the end of each semester through BannerWeb at [my.ltu.edu](http://my.ltu.edu). Report cards are mailed only upon student request to Enrollment Services/Office of the Registrar. It is the students' responsibility to seek their grades at the end of each semester.

## **CHANGE OF CLASS SCHEDULE**

Beginning the first day of classes, students may change their schedule by adding or dropping courses online on BannerWeb at [my.ltu.edu](http://my.ltu.edu). Students are responsible for completing their own Drop/Add procedure and retaining confirmation of the transaction. Classes must be added during the first week of classes.

# Lawrence Technological University

All changes to students' schedules are effective on the date conducted via BannerWeb. Students are not permitted to attend courses without being officially registered.

## **ATTENDANCE**

Class attendance records of students are kept by all members of the faculty. The consequences of absenteeism will be determined by the instructors and will reflect their policy and judgment with respect to the effect of attendance on the students' final grades.

## **PREREQUISITES FOR COURSES**

Students are responsible for successfully completing the prerequisite courses listed in this *Catalog* for all courses in which they are registered. In those exceptional circumstances where a prerequisite may be waived, the student must complete the Prerequisite Waiver Form and submit it to the department head or dean of the college offering the course. If a prerequisite is waived, it is for one semester only and does not exempt the student from taking the waived prerequisite in the future.

A student who is determined to have enrolled in a course without completing the required prerequisites or obtaining an authorized waiver may be required to withdraw at any time during the semester and will forfeit tuition and fees according to the normal University tuition credit policy.

## **MIDTERM STATUS**

The University pays close attention to the academic progress of students through their course work. An examination of students' records occurs during the midway point of the semester. Freshman and other students are encouraged to seek assistance early from the faculty members teaching their courses or to take advantage of the wide range of tutorial and other assistance available through the Office of the Dean of Students and the Academic Achievement Center.

## **ACADEMIC PROBATION**

### **Failure to Make Academic Progress**

Any student whose overall grade point average falls below 2.0 at the end of a semester will be placed on academic probation. Students on academic probation are required to have an advisor's approval to register or to add or drop any class.

Students may also be placed on academic probation for having a GPA lower than 2.0 in their major.

### **Academic Suspension and Dismissal**

Any student whose cumulative grade point average remains below 2.0 at the end of three consecutive semesters of their enrollment, or any student on academic probation who fails to meet the requirements of that probation, will be suspended from the University for a minimum of one calendar year. Veterans who do not meet the aforementioned requirements will lose their University certification for VA benefits. Architecture students are also subject to the continuation requirements described below.

At the end of the designated suspension period, undergraduate students who have been suspended from the University for academic reasons may submit a written petition for readmission to the chair of the Academic Standing Committee. This petition should be received six weeks before the first day of class for the semester in which the student wishes to return.

## **Lawrence Technological University**

Students who have been suspended and subsequently readmitted who fail to meet the conditions of their readmission will be dismissed from the University. Students dismissed from the University under these circumstances may not be readmitted.

The University will not accept transfer credit for courses taken at another college or university during a period of one calendar year following suspension.

### **Excessive Repeating and Withdrawal**

Students are expected to successfully complete all the courses in which they are registered and are encouraged to plan their schedules to avoid overloads and conflicts that would interfere with that objective. Any student who engages in excessive withdrawal from classes or who repeats a required course more than once is subject to academic review and may be placed on academic probation regardless of the overall grade point average. Subsequent continuation of this behavior may result in suspension or dismissal. Students may register for the same course up to three times. After that point, the dean's signature is required to register. Circumstances demonstrably beyond the students' control may excuse them from this requirement, but poor scholarship will not.

### **Failure to Complete Lower Division General Education Requirements**

Lower division (freshman and sophomore) General Education requirements are expected to be completed before entering the junior year (60 or more semester credits). Juniors who have not completed lower division General Education requirements must register for these courses each semester concurrently with upper-division (junior/senior) courses until the requirements are met.

Students who earn 90 semester credits without completion of lower division General Education requirements will be placed on academic probation regardless of the grade point average, and they will not be permitted to register for courses in their major until these requirements are met.

## **COLLEGE OF ARCHITECTURE AND DESIGN**

### **CONTINUATION REQUIREMENTS**

#### **Architecture, Upper Division**

Architecture students must have a minimum grade point average of 2.3 when they reach 60 or more semester credits in order to enroll in junior-level courses in the College of Architecture and Design. Should an architecture student not meet this requirement, the student must repeat courses in which a grade of "C-" or less was earned or otherwise improve the grade point average to meet the requirement.

#### **Graphic Design and Imaging**

The College of Architecture and Design requires that students in the Bachelor of Fine Arts in Graphic Design and the Bachelor of Fine Arts in Imaging – Digital Arts degree programs earn a minimum grade of "B-" (2.7) in each studio course in the sophomore, junior, and senior years of the program. These courses may be repeated up to two times in order to improve performance. (Only grades of "C-" or lower may be recomputed.) Failure to satisfy this requirement will lead to suspension from the BFA program.

### **ACADEMIC STANDING COMMITTEE/READMISSION**

Undergraduate students who have been suspended from the University because of poor scholarship may, after one calendar year, submit a written petition for readmission to the dean of students or the chairperson of the Academic Standing Committee. This petition should be received at least six weeks before the first day of class of the semester in which the student wishes to return.

## Lawrence Technological University

Evidence of planning, curriculum load, and work activities are taken into consideration when reviewing petitions for readmission. Petitions should be well organized, typed, and should include the student's current address, phone number, student number, curriculum, and reasons why the student had previous academic difficulty and why the student now feels he or she can be successful if readmitted.

The petition may include a letter from an employer attesting to competent work and maturity. An official transcript of courses taken at another institution must be submitted at the time the student applies for readmission. However, credit is not allowed for any work taken at another institution for the period of one calendar year following suspension. Once readmitted, a student is required to abide by the graduation requirements outlined in the *Catalog* at the time of readmission. A student's requirements for graduation may be subject to reevaluation.

### ENROLLMENT AT OTHER INSTITUTIONS

Students are expected to complete all courses for a Lawrence Tech degree at the University once they have been admitted. Transfer credit is generally not given for courses taken at other institutions after enrollment at Lawrence Tech, unless those courses cannot be completed at the University.

Students enrolled at Lawrence Tech may not take courses at other institutions after admission to Lawrence Tech and expect those credits to transfer without the prior written permission of the Credit Review Committee. Any courses taken in violation of this policy will be denied transfer or additional credit.

To be eligible for guest credit, students must have:

1. Achieved a 2.0 GPA at Lawrence Tech;
2. Completed 24 credit hours or two semesters at Lawrence Tech;
3. Satisfied the prerequisites for the course(s) that they wish to take at another institution. If prerequisites are in progress for the requested course(s) at the time of submission of the Guest Credit Approval form, a letter from the instructor(s) is required stating the student's grade in the course(s) as of that date and the instructor's opinion (at that point in time) of the student's capability to continue successfully in the requested course;
4. Completed the Guest Credit Approval form (available in Enrollment Services/Office of the Registrar or at [www.ltu.edu/registrar\\_office/forms\\_to\\_print.index.asp](http://www.ltu.edu/registrar_office/forms_to_print.index.asp)).

Students must submit the Guest Credit Approval form to Enrollment Services/Office of the Registrar at least one month before the desired course begins. The Credit Review Committee meets every two weeks and reviews each request individually. The registrar will then send the student a letter informing him or her of the committee's decision.

The student must receive at least a 2.0 in the approved course to have the credit transfer back to Lawrence Tech. It is the student's responsibility to have the official transcript sent to Enrollment Services/Office of the Registrar at Lawrence Tech. Until the official transcript arrives, the credit will not be placed on the student's transcript. In addition, only the course will transfer to Lawrence Tech, not the grade. Lastly, approved guest credit courses may not be transferred back to Lawrence Tech to be used in grade point average recomputation.

### DEAN'S LIST

In recognition of students who achieve superior scholastic records, a Dean's List is published at the close of each semester, and an appropriate notation is made on students' academic records. This includes all students who have carried a minimum of 12 credit hours and have earned a GPA of 3.5 or higher. Part-time

## Lawrence Technological University

students must complete two semesters with at least six credit hours each semester and earn a GPA of 3.5 or higher to be included on the Dean's List. If students have selected confidentiality status, their names will not appear on published lists.

### **TRANSCRIPTS (RECORDS)**

A permanent record of all credits earned at or transferred to the University is maintained for each student in Enrollment Services/Office of the Registrar. These transcripts are preserved indefinitely. All graduates are mailed a copy of their academic transcript at Lawrence Tech as soon as possible after their degree is earned.

At all other times, students are charged a nominal fee for official copies of their Lawrence Tech transcript. Copies of transcripts will not be released without the student's authorization in writing. Transcripts will not be issued unless all financial obligations from prior semesters have been settled.

### **ARCHITECTURAL DRAWINGS AND REPORTS**

All two- and three-dimensional architectural drawings and models, as well as reports and other written studies submitted in satisfaction of any required or elective architectural courses, become the property of the University and may be kept or returned at the sole discretion of the dean of the College of Architecture and Design. When such work is kept, arrangements will be made for the students to receive suitable photographic copies as a record of their design work.

### **FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)**

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights are:

1. The right to inspect and review the student's education records within 45 days of the day the University receives a request for access. Students should submit to Enrollment Services/Office of the Registrar written requests that identify the record(s) they wish to inspect. The University Registrar will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the Enrollment Services/Office of the Registrar, where the request was submitted, the University Registrar shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of any of the student's education records that the student believes are inaccurate or misleading. Students may ask the University to amend a record that they believe is inaccurate or misleading. They should write the University official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent to school officials with legitimate educational interests. A school official is defined as a person employed by the University in an administrative, supervisory, academic, or support staff position (including the law enforcement unit and health staff); a person or company with whom the University has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a person assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.

## Lawrence Technological University

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the University to comply with the requirements of FERPA. The name and address of the office that administers FERPA is:

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington, DC 20202-4605

At Lawrence Technological University the following information is considered Directory Information about a student: dates of attendance, major field of study, class level, degrees and awards received, anticipated degree date, and confirmation that the student is enrolled (enrollment status).

In accordance with the provisions of the Family Educational Rights and Privacy Act (FERPA), this Directory Information can be released to the general public and may be listed in the campus directory, if one is published. Students may withhold this information from being released by completing the Student Request for Non-Disclosure Form. By completing this form, students are requesting that information NOT be released to non-university personnel nor listed in the campus directory, if one is published, for one year. This request remains in effect until removed by the student. Please note that in compliance with federal regulations there are situations in which particular information may be released, upon presentation of official documents, to designated state, local, or government agencies.

Students should consider carefully the impact of their decision to request confidential status. This means that after submission of the form, requests for this information from non-university persons or organizations will be refused. Friends or relatives trying to reach a student will not be able to do so through the University; the student's name will not appear in the printed Commencement program; information that the student is enrolled at Lawrence Tech will be suppressed, so if a loan company, prospective employer, family member, etc., inquires about the student, they will be informed that there is no record of the student's attendance.

Lawrence Tech will honor the student's request to withhold this information but cannot assume responsibility for contacting the student for subsequent permission to release the Directory Information. Regardless of the effect upon the student, Lawrence Technological University assumes no liability as a result of honoring the student's instructions that this information be withheld.

Once a student has designated a confidential classification, it will be removed after one year. If a student wishes the classification removed prior to then, the student should submit a signed authorization requesting that it be removed. This authorization form is available in Enrollment Services/Office of the Registrar.

## Policies, Procedures, and Regulations

### ACADEMIC HONOR CODE

#### INTRODUCTION

Academic integrity and honesty are basic core values of Lawrence Technological University. In carrying out its academic mission, Lawrence Technological University, like all universities, depends on the honesty and integrity of its faculty, staff, and students, and for this reason every member of the Lawrence Technological University community is charged with upholding the Academic Honor Code. Actions that breach the Code erode the trust of those who look to universities for honest evaluations of academic work arrived at through honest processes. Violations may also cause individual harm, in that reports of performance made to post-graduate schools, professional societies, and employers would inaccurately represent a student's progress.

Lawrence Technological University is committed to creating an academic community that values both individual and collaborative efforts that promote learning and discovery. Such a community expects honesty and integrity in the work of all its members. The Academic Honor Code speaks to the work of individual students within the community. It should not be construed as arguing against the important collaborations that also occur among students on campus. This document is intended to clarify the adjudication of issues regarding academic honesty and fair play for students. Instructors are encouraged to review the Violation Reporting Process Flowchart, which is available online along with the Academic Honor Code and the Violation Reporting Form on the Office of the Dean of Students webpage.

Portions of this document have been adapted from (a) the 2002-03 University of North Carolina at Wilmington Academic Honor Code, (b) the 2002-03 Binghamton University Academic Honesty Code, (c) the 2011 Baylor University Academic Integrity and Honor Code, and (d) the 2011 University of Notre Dame Academic Code of Honor.

#### A. ACADEMIC INTEGRITY

Students, faculty, and staff are expected to follow established standards of academic integrity and honesty. Academic misconduct entails dishonesty or deception in fulfilling academic requirements and includes but is not limited to cheating, plagiarism, or the furnishing of false information to the University or a University affiliate in matters related to academics. An affiliate of the University is any person, organization, or company who works in conjunction with Lawrence Technological University for the purposes of assisting students in fulfilling their academic requirements. It is therefore this institution's stated policy that no form of dishonesty among its faculty or students will be tolerated. Although all members of the University community have an obligation to report occurrences of dishonesty, each individual is principally responsible for his or her own conduct.

#### B. ACADEMIC DISHONESTY OFFENSES

Violation of any of the following standards will subject any student to disciplinary action:

##### 1. Plagiarism

The term "PLAGIARISM" includes but is not limited to (a) the use, by paraphrase or direct quotation, of the published or unpublished work or creative and/or intellectual property in print, product, or digital media of another person without full and clear acknowledgment;

(b) the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers, reports, or other academic materials; or (c) the appropriating, buying, receiving as a gift, or obtaining by any other means another person's work and the unacknowledged submission or incorporation of it in one's own work. Plagiarism is unethical, since it deprives the true author of his/her rightful credit and then gives that credit to someone to whom it is not due. Examples include:

- Quoting, paraphrasing, or summarizing written material, even a few phrases, without acknowledgment.
- Failing to acknowledge the source of either a major idea or an ordering principle central to one's own paper.
- Relying on another person's data, evidence, or critical method without credit or permission.
- Submitting another person's work as one's own.
- Using unacknowledged research sources gathered by someone else.
- Copying portions or outcomes of two- or three-dimensional creative property of previously published work.
- Copying items from Internet websites without acknowledgment of the source.

2. **Bribery**

The term "BRIBERY" includes the offering, giving, receiving, or soliciting of any consideration in order to obtain a grade or other treatment not otherwise earned by the student through his/her own academic performance.

3. **Cheating**

The term "CHEATING" includes but is not limited to (a) use of or giving to others any unauthorized assistance in taking quizzes or examinations; (b) dependence upon aids beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (c) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff; or (d) the unauthorized use of any electronic or mechanical device during any program, course, quiz, or examination or in connection with laboratory reports or other materials related to academic performance.

4. **Misrepresentation**

The term "MISREPRESENTATION" includes any act or omission undertaken with intent to deceive an instructor for academic advantage. Examples include:

- Using a computer program generated by another and handing it in as one's own work unless expressly allowed by the instructor.
- Lying to an instructor to improve one's grade.
- Lying or misrepresenting facts when confronted with an allegation of academic dishonesty.



# Lawrence Technological University

5. **Conspiracy**

The term "CONSPIRACY" means planning or acting with one or more persons to commit any form of academic dishonesty in order to gain academic advantage for oneself or another.

6. **Fabrication**

The term "FABRICATION" means the use of invented information or the falsification of research or other findings with the intent to deceive and thereby gain academic or professional advantage.

7. **Multiple Submissions**

The term "MULTIPLE SUBMISSIONS" means submitting substantial portions of the same work for credit more than once, unless there is prior explicit consent by the instructor(s) to whom the material is being or has been submitted.

8. **Unauthorized Collaboration**

The term "UNAUTHORIZED COLLABORATION" means collaborating on projects, papers, computer programs, lab reports, or other academic assignments where such collaboration has been prohibited by the instructor.

9. **Sabotage**

The term "SABOTAGE" means deliberately impairing, destroying, damaging, or stealing another's work or working material. Examples include:

- Destroying, stealing, or damaging another's lab experiment, computer program, term paper, exam, or project.
- Removing uncharged library materials with the effect that others cannot use them.
- Defacing or damaging library materials with the effect that others cannot use them.
- Hoarding or displacing materials within the library with the effect that others have undue difficulty using them.
- Interfering with the operation of a computer system so as to have an adverse effect on the academic performance of others.

**C. JURISDICTION**

All students enrolled at Lawrence Technological University are subject to the Academic Honor Code.

**D. RESPONSIBILITY OF THE UNIVERSITY COMMUNITY**

1. **General Responsibility**

It shall be the responsibility of every faculty member, student, administrator, and staff member of the University community to uphold and maintain the academic standards and integrity of Lawrence Technological University. Any member of the University community

# Lawrence Technological University

who has reasonable grounds to believe that an infraction of the Academic Honor Code has occurred has an obligation to report the alleged violation.

2. **Student Responsibility**

Each student shall abide by the Academic Honor Code at all times.

3. **Responsibility of Individual Instructors**

Instructors are encouraged to make their classes aware of the Academic Honor Code during the first week of each term. Instructors should include a reference to the Academic Honor Code in the course syllabus. The Academic Honor Code is understood to be in effect in every course regardless of whether or not the instructor makes explicit reference to it.

4. **Responsibility of the University Administration**

The Office of the Dean of Students is responsible for the publication and dissemination of the Academic Honor Code and any amendments or changes approved by the Deans Council with the recommendation of the Faculty Senate and the Faculty Councils of the colleges. All new University faculty, administrative staff, personnel, and students should be advised of the Academic Honor Code upon becoming members of the University community.

The dean of each college may establish additional steps for addressing violations of the Academic Honor Code that are consistent with the mission and academic programs offered by the college and the Academic Honor Code. Such additional steps must be endorsed by the dean of students, filed, and communicated to all faculty members and students within the college.

5. **Responsibility of the Office of the Registrar and the Office of the Dean of Students**

The Office of the Registrar and the Office of the Dean of Students shall receive and maintain comprehensive records of all matters relating to violations of the Academic Honor Code. The dean of students will receive a copy of the Academic Honor Code Violation Reporting Form completed by the instructor and/or Academic Honor Council, to be included in the student's academic record.

## E. **ACADEMIC HONOR COUNCIL**

1. **Responsibilities**

- a. Determines through the process of a hearing whether an accused student has violated the Academic Honor Code;
- b. Recommends one or more sanction(s), such as rewriting of the assignment, failure of the assignment/exam, failure in the course, suspension, or expulsion (the last two sanctions are limited to second-time violators of the Academic Honor Code), for students who have been found in violation of the Academic Honor Code; and
- c. Assists in educating the University community about the Academic Honor Code.

2. **Composition**

The Academic Honor Council is composed of eight student members and eight faculty members. Each college is represented by two students and two faculty members. The student members shall be appointed annually by the dean of students with the advice of the dean of each college. The faculty members shall be appointed for three-year terms by

their respective deans. A chair and vice chair shall be appointed by the provost from among the faculty members appointed to the council. Each student member must have a current and cumulative grade point average of 3.0 or higher at the time of the appointment and must maintain a current and cumulative grade point average of 2.5 or higher during service.

3. **Jurisdiction**

The Academic Honor Council has exclusive jurisdiction over all academic matters involving dishonorable conduct that are not resolved between the student and the instructor in whose class the incident occurred. The Academic Honor Council automatically conducts a hearing for any incident where the student has been previously found in violation of the Academic Honor Code.

4. **Quorum**

A quorum for an Academic Honor Council hearing is three faculty and two student members. A quorum is not affected by a member of the Academic Honor Council disqualifying him- or herself after a hearing has begun.

In the event a quorum cannot be obtained for a pending matter, and the chair determines that a hearing must occur before a quorum can be obtained using regular Academic Honor Council members, students serving on the Student Discipline Committee may be used as substitutes, provided they otherwise meet the qualifications of Academic Honor Council members and have received similar training.

5. **Disqualification**

A member of the Academic Honor Council shall disqualify him- or herself if he or she feels that, in reaching a decision as to whether or not an accused student has violated the Academic Honor Code, he or she cannot act on the weight of the evidence without bias or prejudice. The Academic Honor Council may, by two-thirds vote, disqualify one of its members from sitting on a hearing, if that would best serve the interests of the Academic Honor Council and the University.

## F. REPORTING AND ADJUDICATION PROCEDURES

1. **Reporting a Violation**

A suspected violation of the Academic Honor Code may be reported by any member of the University community who has knowledge of such infraction. The infraction should be reported to the instructor of the course in which it occurred, where applicable. If the course or instructor is unknown, the incident may be reported to the appropriate academic department chairperson or dean, or to the dean of students. Such an accusation should be made within seven (7) calendar days from the time of discovery, unless extenuating circumstances prevent reporting.

2. **Presumption of Non-Violation**

Any student charged with a violation under this Code shall be presumed not responsible until it is proven that the violation of the rule or regulation occurred. The burden of proof shall rest with those bringing the charges and is defined as a preponderance of the evidence.

### 3. **Responding to Reports of a Violation**

Upon receiving an accusation of a violation or having evidence of a violation, the instructor in charge of the course or materials in question may handle the matter directly with the student or refer it to the Academic Honor Council. In either situation, the instructor must report the alleged violation to the department chair or dean of the college and to the dean of students by email. The instructor is encouraged to discuss the matter with his or her department chair, dean of the college, or the dean of students. The dean of students will verify if the student has previously violated the Academic Honor Code. If the student has previously violated the Academic Honor Code, the alleged violation will be referred to the Academic Honor Council. In a situation where a student has not previously violated the Academic Honor Code, the instructor may choose to handle the matter directly with the student or refer the matter to the Academic Honor Council.

Course withdrawal does not ensure immunity against the consequences of an Academic Honor Code violation. Should a student successfully withdraw from a course after an alleged violation is reported, the class may be administratively reinstated to the student's schedule and the appropriate academic sanction imposed. In this situation, the student is not eligible for a refund of tuition and fees.

Additionally, a student is allowed to remain in a course and participate without prejudice until he or she has exhausted all appeals. The findings of an investigation shall not be shared with other students in the course. The instructor is expected to treat the student without prejudice during the investigation of a potential violation and after sanction if the student is allowed to remain in the course.

### 4. **Handling the Matter Directly with the Student for a First Violation**

- a. If the instructor handles the matter directly with the student, the issue must be addressed within seven (7) calendar days after discovering the violation. If the instructor would like additional time beyond the seven (7) days to resolve the matter with the accused student, the instructor may ask the dean of students and the department chair or dean of his or her college for an extension. The instructor must make the request for more time within the original seven (7)-day time period.
- b. The instructor will inform the student in writing (email) of the alleged violation, describe the evidence supporting the alleged violation, and request a written response from the student by a certain date. The instructor should copy the dean of students and his or her department chair on all correspondence with the student related to the alleged violation. If necessary, the instructor will conduct an interview with the student. The instructor will determine whether the student violated the Academic Honor Code. If the instructor finds the student guilty of violating the Academic Honor Code, the instructor must file the Academic Honor Code Violation Reporting Form with the dean of students. The report will describe the nature of the violation and the sanction (action taken).

If the student is found in violation, the instructor may choose from the following sanctions: rewriting of the assignment, failure of the assignment/exam, or failure in the course.

The dean of students will send a copy of the report to the student and retain the original report in the student's file. The Academic Honor Code Violation Reporting Form is available in the Office of the Dean of Students and online at [www.ltu.edu/currentstudents/honor\\_code.asp](http://www.ltu.edu/currentstudents/honor_code.asp)

- c. If the faculty member finds the student **not** guilty of dishonorable conduct in connection with an alleged violation, the allegations are dismissed and the matter is closed. The faculty member is expected to document his or her findings and rationale for dismissing the allegation to his or her dean or department chair and the dean of students.
- d. A student found in violation of the Academic Honor Code by an instructor may appeal the findings to the Academic Honor Council. The student must request a meeting with the dean of students to initiate the appeal process.
5. **Referring the Matter to the Academic Honor Council**  
If an instructor believes a student may have violated the Academic Honor Code and chooses to refer the matter to the Academic Honor Council, the instructor must first report the alleged violation to his or her department chair or the dean of the college by email and provide the dean of students with the Academic Honor Code Violation Reporting Form. By providing the dean of students with the report, the instructor is indicating to the dean of students that he or she has chosen not to handle the investigation and instead is referring the case to the Academic Honor Council. The referral must be made within seven (7) calendar days after discovery of the violation.

## G. HEARINGS

### 1. Procedure

- a. **Notice to the Grievant and Accused**  
Within five (5) calendar days after an alleged violation of the Academic Honor Code has been referred to the Academic Honor Council, the dean of students shall notify in writing the grievant and the accused student of the basis for the alleged violation of the Academic Honor Code; the date, time, and place the violation allegedly occurred; the nature of the evidence upon which the grievant will rely; and the date, time, and place at which the Academic Honor Council will meet to determine if a violation has occurred. The notice must inform both the grievant and the accused of their responsibilities at the hearing. If written evidence will be relied upon in whole or in part to establish a violation, the accused student shall be given an opportunity to examine such evidence prior to the time of the hearing. Ordinarily, such writings shall remain in the possession of the dean of students and subject to the control of the chair of the Academic Honor Council. The dean of students shall make necessary arrangements to afford the accused sufficient access to such writings to permit his or her preparation of an appropriate response to charges based in whole or in part upon such writings.
- b. **Hearing Date**  
The Academic Honor Council must meet to consider an alleged violation of the Academic Honor Code within ten (10) calendar days after the alleged violation is

referred to the Academic Honor Council. However, the hearing should not take place until three (3) calendar days after the notification is sent to the student unless the student desires an expedited hearing and waives the three-day waiting requirement. If the hearing should fall during a University holiday, semester break, the summer months, or a time when a quorum of the Academic Honor Council is not available, the chair has the responsibility to schedule the hearing within the earliest reasonable time frame.

c. **Who May Attend**

Only members of the Academic Honor Council, the accused, the grievant, witnesses (while giving testimony), and the dean of students, or his or her designee, may attend a hearing. Lawyers representing the accused or the grievant and character witnesses are specifically excluded. The dean of students, or his or her designee, is present to assist with administrative matters and shall not vote.

d. **The Hearing**

The hearing is presided over by the chair of the Academic Honor Council, or in his or her absence, the vice chair. If the vice chair also is not present, the members of the Academic Honor Council may elect a temporary chair or postpone the hearing. The chair shall select a secretary for the hearing.

The chair is in charge of the hearing and has broad discretion. The chair shall exercise control over the conduct of all persons participating in the hearing and direct the initial questioning to the grievant and the accused and their witnesses. The chair shall act as a hearing examiner by developing the facts and evidence necessary to enable the Academic Honor Council to make a decision as to whether or not the Academic Honor Code has been violated. In so doing, the chair may exclude irrelevant, immaterial, and unduly repetitious evidence. The chair may, at his or her discretion, recess the hearing as often as necessary to ensure fairness to the grievant or the accused.

The hearing shall consist of two phases: (1) the presentation of evidence and (2) the deliberations of the Academic Honor Council. During the presentation of evidence phase, the grievant and the accused shall present to the Academic Honor Council facts and circumstances that will enable the Academic Honor Council to determine whether or not the accused has violated the Academic Honor Code. In presenting their positions, the grievant and the accused may ask others to present testimony or documentary evidence. In order to clarify issues, resolve inconsistencies or conflicts in testimony, or to ascertain facts, each member of the Academic Honor Council may ask questions of any person appearing at the hearing.

e. **Evidence**

The accused and the grievant may present to the Academic Honor Council any evidence, oral or written, that, in the discretion of the chair of the Academic Honor Council, is pertinent to the alleged Academic Honor Code violation or that might

shed light on the facts and circumstances surrounding it. It is important for the grievant and the accused to offer all of their evidence at the time of the hearing. The presentation of evidence is audio recorded. Once the presentation of evidence is concluded, and the audio recorder is turned off, the Academic Honor Council may not consider additional evidence or testimony. Witnesses and evidence must be presented at the hearing if a party wants them to be considered by the Academic Honor Council.

It is essential that witnesses with first-hand knowledge of the facts and circumstances surrounding the alleged Academic Honor Code violation appear in person. A contention by a party appearing before the Academic Honor Council that he or she could get a witness to testify, if necessary, is not helpful to the Academic Honor Council. When a witness cannot be present at the hearing, the grievant or the accused may present to the Academic Honor Council a signed, notarized statement from the absent witness. Because the absent witness cannot be questioned by the other party or the members of the Academic Honor Council, this evidence may be given less weight than other first-hand testimony.

f. **Questioning**

In addition to members of the Academic Honor Council, the grievant and the accused may question one another or the witness(es) of either.

g. **Failure to Appear**

If the grievant or the accused fails to appear before the Academic Honor Council on the date and at the time and place specified in the notice, the Academic Honor Council may take the available testimony and evidence and reach a decision on the basis of that evidence. Failure of one party to appear and offer evidence may leave the Academic Honor Council little choice but to decide in favor of the party presenting the only evidence and testimony.

If either party is unable to appear before the Academic Honor Council on the date specified in the notice, he or she should notify the Academic Honor Council chair and explain why. If the Academic Honor Council chair determines that good cause exists for the party's non-appearance at the scheduled hearing time, he or she shall set a new date for the hearing.

2. **Standard of Proof**

The Academic Honor Council determination shall be made on the basis of whether it is more likely than not that the accused student violated the Academic Honor Code. If a majority of the Academic Honor Council votes that the evidence supports the allegation, the Academic Honor Council shall render a decision that the accused has violated the Academic Honor Code. In finding a student in violation of the Academic Honor Code, the Academic Honor Council has determined that the evidence supporting the violation was of greater weight or more convincing than the evidence that was offered in opposition by the student. If the majority of the Academic Honor Council determines the evidence does not support the accusation, the student will be found not in violation of the Academic Honor Code.

3. **Decision of the Academic Honor Council**

After the presentation of evidence is concluded, the chair shall excuse the accused and the grievant from the Academic Honor Council meeting. The Academic Honor Council shall then discuss the evidence presented during the hearing, and when finished, the chair shall poll the members on whether or not they think the evidence supports the allegation that the accused violated the Academic Honor Code.

If a majority of the Academic Honor Council votes that a preponderance of the evidence supports the allegation, the Academic Honor Council shall render a decision that the accused has violated the Academic Honor Code. If less than a majority of the Academic Honor Council votes that the evidence supports the allegation, the Academic Honor Council shall render a decision that the allegation was not substantiated. A voting member of the Academic Honor Council who is not disqualified may not abstain from voting.

If the Academic Honor Council determines that the accused student has violated the Academic Honor Code, it shall also recommend the sanction(s) it believes should be imposed upon the student. The Academic Honor Council must give great weight to the sanction(s) recommended by the instructor, but it may also consider the materials and information presented at the hearing, and the student's academic and honor code records. Possible sanctions include, but are not limited to, failure of the assignment, failure of the course, probation, suspension, and/or expulsion. In the case of a second violation, the likely sanction is expulsion from the University.

4. **Summary Report and Record of Hearing**

- a. The secretary of the Academic Honor Council shall prepare a summary report of the hearing, including the decision of the Academic Honor Council. The members of the Academic Honor Council shall review this summary; make necessary changes, if any; and indicate their approval of it by signing it.
- b. The record of the hearing shall consist of the audio recording of the hearing and the tangible evidence presented at the hearing.

5. **Notification**

The chair of the Academic Honor Council shall report the Council's decision to the dean of students. In addition, if the decision is that the Academic Honor Code has been violated, the Academic Honor Council chair shall deliver to the dean of students the record of the hearing, along with the recommended sanction(s). The dean of students will implement the sanction(s) recommended by the Academic Honor Council. If the Academic Honor Council recommends expulsion, the dean of students will immediately initiate expulsion proceedings.

6. **Disposition of Summary Report and Record of Hearing**

- a. If the Academic Honor Council decides that the Academic Honor Code was not violated, the chair shall destroy the record of the hearing. The dean of students



## Lawrence Technological University

will make a record of the decision without any identifying information and destroy all other information pertaining to the charge. The student may continue in the class without prejudice.

- b. If a student is found by the Academic Honor Council to have violated the Academic Honor Code, the dean of students shall maintain the summary report and record of the hearing.
- c. The dean of students shall notify the instructor, department chair, and the dean of the college in writing of the Academic Honor Council's decision.

### H. APPEAL PROCESS

1. A decision reached or a sanction imposed by the Academic Honor Council may be appealed by the student(s) found to be in violation or the grievant(s) to the Discipline Appeals Committee within seven (7) calendar days of the decision. Such appeals shall be in writing and shall be delivered to the dean of students or designee.
2. The Discipline Appeals Committee is composed of three (3) members: the chair of the Faculty Senate; the associate provost; and the president of Student Government.
3. Except as required to explain the basis of new information, an appeal shall be limited to the review of the verbatim records of the Academic Honor Council hearing and supporting documents for one or more of the following purposes:
  - a. To determine whether the Academic Honor Council hearing was conducted fairly in light of the charges and information presented, and in conformity with prescribed procedures, giving the complaining party a reasonable opportunity to prepare and present evidence that the Academic Honor Code was violated, and giving the other party a reasonable opportunity to prepare and to present a response to those allegations. Deviations from designated procedures will not be a basis for sustaining an appeal unless significant prejudice results.
  - b. To determine whether the decision reached regarding the accused student was based on substantial information; that is, whether the facts in the case were sufficient to establish that a violation of the Academic Honor Code occurred.
  - c. To determine whether the sanction(s) imposed were appropriate for the violation of the Academic Honor Code that the student was found to have committed.
  - d. To consider new information sufficient to alter a decision or other relevant facts not brought out in the original hearing, because such information and/or facts were not known to the person appealing at the time of the original Academic Honor Council hearing.
4. If the Discipline Appeals Committee supports an appeal, the matter may be returned to the original Academic Honor Council for a reconsideration of the original determination and/or sanction(s).
  - a. In cases involving appeals by students accused of violating the Academic Honor Code, the Discipline Appeals Committee may, upon review of the case, reduce but not increase the sanctions imposed by the Academic Honor Council.

## Lawrence Technological University

- b. In cases involving appeals by persons other than the student(s) accused of violating the Academic Honor Code, the Discipline Appeals Committee may, upon review of the case, reduce or increase the sanctions imposed by the Academic Honor Council.
5. Following the appeal, the dean of students shall advise the accused student(s) in writing of the determination of the Discipline Appeals Committee and of the sanction(s) imposed, if any. A copy of the notification will be retained in the student's disciplinary record. Cases involving University suspension and expulsion will be filed in the student's academic record.

### I. EXPULSION PROCEEDINGS

1. Expulsion proceedings will be initiated by the dean of students for students found in second violation of the Academic Honor Code. The student will be contacted by the office of the dean of students for a meeting to explain proceedings of expulsion.
2. Students being expelled will receive written notification from the dean of students indicating the sanction of expulsion and the process for appeal.
3. The sanction of expulsion may be appealed by the accused student to the provost within seven (7) calendar days of the decision. Such appeals shall be in writing and shall be delivered to the dean of students or designee.
4. Except as required to explain the basis of new information, an appeal shall be limited to a review of documents and notes of the Academic Honor Council, the accused student, and supporting documents for one or more of the following purposes:
  - a. To determine whether the student received fundamental fairness in the investigative and decision-making processes.
  - b. To determine whether the facts in the case were sufficient to establish that a violation of the Academic Honor Code occurred in both cases.
  - c. To consider relevant and material new evidence.
5. Following the appeal, the provost shall advise the accused student in writing of the determination of the appeal, and of the sanctions imposed, if any. A copy of the notification will be retained in the student's academic record and the student's disciplinary record.

### Student Pledges

In adopting this Academic Honor Code, students of Lawrence Technological University recognize that academic honesty and integrity are fundamental values of the University community. The quality of a Lawrence Technological University education is dependent upon the community acceptance and enforcement of the Academic Honor Code. Members of the Lawrence Technological University community pledge to hold themselves and their peers to the highest standards of academic honesty and integrity. An individual who becomes aware of a violation of the Academic Honor Code has an obligation to report this violation.

### *Undergraduate Students*

# Lawrence Technological University

The following pledge is required on all academic work submitted by undergraduate students at Lawrence Technological University:

*"I have neither given nor received unauthorized aid in completing this work, nor have I presented someone else's work as my own."*

## **Graduate Students**

All graduate students at Lawrence Technological University are required to sign the student pledge when they start graduate studies:

*"I pledge that on all academic work that I submit, I will neither give nor receive unauthorized aid, nor will I present another person's work as my own."*

## **STUDENT CODE OF CONDUCT**

Lawrence Technological University is an institution that encourages the intellectual and personal growth of its students as scholars and citizens. Linking theory and practice with advanced learning technologies, Lawrence Technological University's mission is to provide superior undergraduate, graduate, and lifelong learning for leadership, professional achievement, and civic excellence. In this pursuit, the University recognizes that the transmission of knowledge, the pursuit of truth, and the development of individuals require the free exchange of ideas, self-expression, and the challenging of beliefs and customs. Academic freedom is essential to the achievement of these purposes.

Honesty, integrity, and caring are essential qualities of an educational institution, and the concern for values and ethics is important to the whole educational experience. The Student Code of Conduct outlines the rights and responsibilities and expected levels of conduct of students in the University community. Fundamental to the achievement of community among the members of the University is the recognition by all such members that each shares a responsibility to observe University regulations. This obligation, which is an extension of the citizen's responsibility to observe the law of the land, is an essential corollary to participation in the academic rights afforded to members of the University.

A student voluntarily joins the Lawrence Technological University community and thereby assumes the obligation of abiding by the standards prescribed in the Student Code of Conduct. Students are required to engage in responsible social conduct that reflects credit upon the University community and to model good citizenship in any community. The University, through the Office of the Dean of Students, maintains the exclusive authority to impose sanctions for behaviors that violate the Student Code of Conduct.

All students enrolled at Lawrence Technological University have access to the Student Code of Conduct. Printed copies are available through the Office of the Dean of Students and the Office of University Housing. The Student Code of Conduct, along with other helpful information, also may be accessed online at [www.ltu.edu/student\\_affairs/student\\_conduct.asp](http://www.ltu.edu/student_affairs/student_conduct.asp).

### **A. Definitions**

1. The term "UNIVERSITY" means Lawrence Technological University.

## Lawrence Technological University

2. The term "STUDENT" includes all persons taking courses at the University either full-time or part-time, pursuing undergraduate, graduate, or professional studies. Persons who withdraw after allegedly violating the Student Code, who are not officially enrolled for a particular term but who have a continuing relationship with the University, or who have been notified of their acceptance for admission are considered "students," as are persons who are living in University residence halls, although not enrolled in this institution. This Student Code does apply at all locations of the University, including education centers in Wayne, Oakland, Macomb, and outlying counties in Michigan and centers in other states and foreign countries.
3. The term "FACULTY MEMBER" means any person hired by the University to conduct classroom or teaching activities or who is otherwise considered by the University to be a member of its faculty.
4. The term "UNIVERSITY OFFICIAL" includes any person employed by the University who is performing assigned administrative or professional responsibilities.
5. The term "MEMBER OF THE UNIVERSITY COMMUNITY" includes any person who is a student, faculty member, University official, or any other person employed by the University. A person's status in a particular situation shall be determined by the dean of students.
6. The term "UNIVERSITY PREMISES" includes all land, buildings, facilities, and other property in the possession of or owned, used, or controlled by the University, including adjacent streets and sidewalks.
7. The term "ORGANIZATION" means any number of persons who have complied with the formal requirements for University recognition.
8. The term "STUDENT DISCIPLINE COMMITTEE" means any person or persons authorized by the dean of students to determine whether a student has violated the Student Code and to recommend sanctions that may be imposed when a regulations violation has been committed.
9. The term "STUDENT CONDUCT OFFICER" means a University official authorized on a case-by-case basis by the dean of students to impose sanctions upon any student found to have violated the Student Code. The dean of students may, in certain circumstances, authorize a student conduct officer to serve simultaneously as a student conduct officer and as the sole member, or one of the members, of the Student Discipline Committee. The dean of students may authorize the same student conduct officer to impose sanctions in all cases.
10. The term "DISCIPLINE APPEALS COMMITTEE" means any person or persons authorized by the dean of students to consider an appeal from a Student Discipline Committee's determination as to whether a student has violated the Student Code.
11. The term "SHALL" is used in the imperative sense.
12. The term "MAY" is used in the permissive sense.
13. The term "POLICY" means the written regulations of the University as found in, but not limited to, the Student Code, the *Student Handbook*, the *Guidelines for University Living*, the University webpage and computer use policy, and *Undergraduate* or *Graduate Catalogs*.

# Lawrence Technological University

14. "LEVEL I" violations of the Student Code are those for which the sanctions may be a warning, disciplinary probation, special restrictions or loss of privileges, fines, restitution, imposed reassignment of course section or housing assignment, or assignments of discretionary sanctions. Level I violations will generally be heard by a student conduct officer.
15. "LEVEL II" violations of the Code are those for which the sanctions may be, in addition to those listed in Level I, suspension from University Housing and/or from the University or expulsion from University Housing and/or from the University. Level II violations will generally be heard by the Student Discipline Committee.
16. The term "COMPLAINANT" means any person who submits a charge alleging that a student violated this Student Code. When a person believes that she/he has been a victim of another student's misconduct, the student who believes she/he has been a victim will have the same rights under this Student Code as are provided to the complainant, even if another member of the University community submitted the charge itself.
17. The term "ACCUSED STUDENT" means any student accused of violating this Student Code.

## **B. Student Code Authority**

1. The dean of students shall determine the composition of the Student Discipline Committee and Discipline Appeals Committee and determine which Student Discipline Committee, student conduct officer, and Discipline Appeals Committee shall be authorized to hear each matter.
2. The dean of students is that person designated by the University president to be responsible for the administration of the Student Code. The dean of students shall develop policies for the administration of the student conduct system and procedural rules for the conduct of Student Discipline Committee hearings that are not inconsistent with provisions of the Student Code.
3. Decisions made by the Student Discipline Committee and/or student conduct officer designated by the dean of students shall be final, pending the normal appeal process.
4. The Student Discipline Committee may be designated as arbiter of disputes within the student community in cases that do not involve a violation of the Student Code. All parties must agree to arbitration and to be bound by the decision with no right of appeal.

## **C. Conduct – Rules and Regulations**

Acts of academic dishonesty are regulated by procedures outlined in the Academic Honor Code. Any student found to have committed the following misconduct is subject to the disciplinary sanctions outlined in Section H:

1. Acts of dishonesty, including but not limited to the following: cheating, plagiarism, or other forms of academic dishonesty; furnishing false information to any University official, faculty member, or office; forgery; alteration or misuse of any University document, record, or instrument of identification; helping or attempting to help another student commit an act of dishonesty; tampering with the election of any University-recognized student organization.

## Lawrence Technological University

2. Disruption or obstruction of teaching, research, administration, disciplinary proceedings, or other University activities, including its public-service functions on or off campus or other authorized non-University activities, when the act occurs on University premises.
3. Physical abuse, verbal abuse, threats, intimidation, harassment, coercion, stalking, and hate crimes or acts that are racially motivated or due to one's sexual orientation, gender expression, and/or other conduct that threatens or endangers the health or safety of any person.
4. Attempted or actual theft of and/or damage to property of the University or property of a member of the University community or other personal or public property, on or off campus.
5. Hazing, defined as an act that endangers the mental or physical health or safety of a student, or which destroys or removes public or private property, for the purpose of initiation, admission into, affiliation with, or as a condition for continued membership in a group or organization. The express or implied consent of the victim will not be a defense. Apathy and/or acquiescence in the presence of hazing are not neutral acts; they are violations of this regulation.
6. Failure to comply with directions of University officials or law enforcement officers acting in performance of their duties and/or failure to identify oneself to these persons when requested to do so.
7. Unauthorized possession, duplication, or use of keys to any University premises or unauthorized entry to or use of University premises.
8. Violation of any University policy, rule, or regulation published in hard copy, posted on campus, or available electronically on the University website.
9. Violation of federal, state, or local law on University premises or at University-sponsored or supervised activities.
10. Use, possession, manufacturing, or distribution of marijuana, heroin, narcotics, or other controlled substances, except as expressly permitted by law; use or possession of drug paraphernalia.
11. Use, possession, manufacturing, or distribution of alcoholic beverages, except as expressly permitted by the law and University regulations, or public intoxication. Alcoholic beverages may not, in any circumstances, be used by, possessed by, or distributed to any person under 21 years of age.
12. Possession of firearms, explosives, any object that by its intended or actual use may be used to threaten or harm people or damage or destroy property, or other weapons or dangerous chemicals on University premises.
13. Participation in an on-campus or off-campus demonstration, riot, or activity that disrupts the normal operations of the University and infringes on the rights of other members of the University community; leading or inciting others to disrupt scheduled and/or normal activities within any campus building or area; intentional obstruction that unreasonably interferes with freedom of movement, either pedestrian or vehicular, on campus.

## Lawrence Technological University

14. Obstruction of the free flow of pedestrian or vehicular traffic on University premises or at University-sponsored or supervised functions, or violation of any regulations outlined in the Lawrence Tech Parking and Traffic Regulations.
15. Conduct which is disorderly, lewd, indecent, or a breach of the peace; or aiding, abetting, or procuring another person to breach the peace on University premises or at functions sponsored, or participated in, by the University or members of the academic community. Disorderly conduct includes but is not limited to: any unauthorized use of electronic or other devices to make an audio or video recording of any person while on University premises without his/her knowledge, or without his/her effective consent when such recording is likely to cause injury or distress. This includes but is not limited to surreptitiously taking pictures of another person in a gym, locker room, or restroom.
16. Theft or other abuse of computer facilities and resources, including but not limited to: unauthorized entry into a file to use, read, change, or delete the contents or for any other purpose; unauthorized transfer of a file; use of another individual's identification and password; use of computing facilities to interfere with the work of another student, faculty member, or University official; use of computing facilities to send obscene or abusive messages; use of computing facilities to interfere with normal operation of the University computing system; use of computing facilities and resources in violation of copyright laws; any violation of the University's Computing and Network Policy.
17. Tampering with any telecommunications services, including but not limited to: telephone, cable television, and/or voicemail; providing unauthorized service to another room, suite, or apartment by any means through unauthorized installation of wiring jacks or extensions.
18. Abuse of the student conduct system, including but not limited to: failure to obey the summons of the Student Discipline Committee, Discipline Appeals Committee, student conduct officer, or University official to appear for a meeting or hearing as part of the student conduct system; falsification, distortion, or misrepresentation of information before a Student Discipline Committee, Discipline Appeals Committee, or student conduct officer; disruption or interference in bad faith with the orderly conduct of a proceeding; attempting to discourage an individual's proper participation in, or use of, the student conduct system; attempting to influence the impartiality of a member of a Student Discipline Committee or Discipline Appeals Committee prior to, and/or during, and/or after a student conduct proceeding; harassment (verbal or physical) and/or intimidation of a member of the Student Discipline Committee or Discipline Appeals Committee prior to, during, and/or after a student conduct proceeding; failure to comply with the sanction(s) imposed under the Student Code; influencing or attempting to influence another person to commit an abuse of the student conduct system.
19. Actions that endanger the student, the University or local community, or the academic process, or that cause harm to self or others.

### **D. Jurisdiction of the Lawrence Technological University Student Code**

The Lawrence Technological University Student Code shall apply to conduct that occurs on University premises, at University-sponsored activities, and to off-campus conduct that adversely affects the

## Lawrence Technological University

University community and/or the pursuit of its objectives. Each student shall be responsible for his/her conduct from the time of application for admission through the actual awarding of a degree, even though conduct may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment (and even if their conduct is not discovered until after a degree is awarded). The Student Code shall apply to a student's conduct even if the student withdraws from school while a disciplinary matter is pending. The dean of students shall decide whether the Student Code shall be applied to conduct occurring off campus, on a case-by-case basis, at his/her sole discretion.

### E. Violation of Law and University Discipline

1. University disciplinary proceedings may be instituted against a student charged with conduct that potentially violates both the criminal law and this Student Code (that is, if both possible violations result from the same factual situation) without regard to the pendency of civil or criminal litigation in court or criminal arrest and prosecution. Proceedings under this Student Code may be carried out prior to, simultaneously with, or following civil or criminal proceedings off campus at the discretion of the dean of students. Determinations made or sanctions imposed under this Student Code shall not be subject to change because criminal charges arising out of the same facts that gave rise to violation of University rules or regulations were dismissed, reduced, or resolved in favor of or against the criminal law defendant.
2. When a student is charged by federal, state, or local authorities with a violation of law, the University will not request or agree to special consideration for that individual because of his or her status as a student. If the alleged offense is also being processed under the Student Code, the University may advise off-campus authorities of the existence of the Student Code and how such matters are typically handled within the University community. The University will attempt to cooperate with law enforcement or other agencies in the enforcement of criminal law on campus and in the conditions imposed by criminal courts for the rehabilitation of student violators (provided that the conditions do not conflict with campus rules, regulations, or sanctions). Individual students and other members of the University community, acting in their personal capacities, remain free to interact with governmental representatives as they deem appropriate.

If a student is charged with an off-campus violation of federal, state, or local laws, but not with any other violation of this Code, disciplinary action may be taken by the University and sanctions imposed for grave misconduct which demonstrates flagrant disregard for the University community. In such cases, no sanction may be imposed unless the student has been found guilty in a court of law or has declined to contest such charges, although not actually admitting guilt (e.g., "no contest" or "nolo contendere").

### F. Student Code of Conduct Procedures

All suspected violations of the Code will be reviewed in accordance with the procedures outlined below.

1. **Disciplinary Correspondence**  
All disciplinary correspondence will be sent to the student's official mailing address as listed with Enrollment Services/Office of the Registrar. The University reserves the right to use other reasonable means to notify students.



# Lawrence Technological University

## 2. Filing Complaints

- a. Any member of the University community may make a complaint and/or referral or offer information concerning such complaint and/or referral to the Office of the Dean of Students. A complaint or referral made against a student or students alleging violation(s) of the Student Code of Conduct shall be directed to the dean of students for review. Any complaint should be prepared in writing on a University incident report form and should be submitted as soon as possible after the event takes place, preferably within 48 hours.
- b. While action on a complaint of violating a University rule or regulation is pending, the status of the student shall not be altered except for reasons outlined in Section J.

## 3. Presumption of Non-Violation

Any student charged with a violation under this Code shall be presumed not responsible until it is proven that, more likely than not, the violation of the rule or regulation occurred.

## 4. Preliminary Investigation

When the dean of students or designee receives information that a student has allegedly violated University rules or regulations, or local, state, or federal law, the dean or designee shall investigate the alleged violation and determine whether further action is necessary. After completing a preliminary investigation, the dean or designee may:

- a. Find no basis for the complaint and dismiss the allegation as unfounded, or
- b. Contact the student for a discussion and either:
  - (1) Dismiss the allegation.
  - (2) Identify that the alleged violation(s) equates to a Level I infraction and assign the case to a student conduct officer to conduct a student conduct meeting with the student(s).
  - (3) Identify that the alleged violation(s) equates to a Level II infraction and schedule a hearing with the Student Discipline Committee.

## 5. Summoning a Student for a Student Conduct Meeting

A student conduct meeting is a meeting between a student(s) involved in an alleged violation of the Code and a student conduct officer and may include sanctions. In some cases, the meeting may resolve the matter.

- a. The student conduct officer shall provide the student with:
  - (1) Written notice of the charge(s) and an outline of rights.
  - (2) Review of all available information, documents, exhibits, and a list of witnesses that may testify against the student.
- b. Following receipt of the notice of charges, a student:
  - (1) May elect not to contest the charges and to accept responsibility for them. If this election is made, the student must sign a waiver of the right to a hearing, and must accept the sanction imposed by the student conduct officer. The decision to waive a hearing and accept the sanction is final and not appealable.
  - (2) May contest the charges and elect to proceed to a hearing. The hearing shall be scheduled not less than five (5) nor more than 15 calendar days from the student conduct meeting.

## G. Hearing Process

Hearings provide the forum in which parties to an allegation are afforded the opportunity to present information for review by a Student Discipline Committee presided over by the chair of the Committee and moderated by the dean of students. The dean of students is an ex-officio member of the Committee. A time shall be set for a Student Discipline Committee hearing not less than five (5) nor more than 15 calendar days after the student has been notified. The maximum time limit for scheduling of hearings may be extended at the discretion of the dean of students or designee.

Hearings shall be conducted by the Student Discipline Committee according to the following guidelines, except as provided by article J below:

1. In cases in which the Student Discipline Committee has been authorized by the dean of students to conduct a hearing, the recommendations of the members of the Student Discipline Committee shall be considered in an advisory capacity by the dean of students in determining and imposing sanctions.
2. Composition: The Student Discipline Committee is composed of 15 members. Recommendations for membership on the Student Discipline Committee from the deans of each academic college, the faculty, the administration and staff of the University, and the executive committee of Student Government will be sought by the dean of students on an annual basis, or more frequently as needed. At the discretion of the dean of students, general solicitation of the student body for participation may be made. Based upon these recommendations and/or solicitations, candidates who meet eligibility requirements will be invited to apply and interview for participation on the Student Discipline Committee.
3. Term of service: Students shall serve for one academic year and may continue to serve at the discretion of the provost and the dean of students.
4. Student eligibility: All students, full- or part-time, shall be eligible for recommendation to the Student Discipline Committee provided they have maintained a 2.3 cumulative grade point average, are not currently on disciplinary probation, and have not been suspended from the residence halls or the University.
5. Training: All members of the Student Discipline Committee, upon receiving notice of appointment, shall be given all necessary information about their responsibilities and the means for carrying them out.
6. Five students from the Student Discipline Committee will be chosen by the dean of students to hear a proceeding.
7. Hearings normally shall be conducted in private.
8. The complainant, the accused student, and their advisors, if any, shall be allowed to attend the entire portion of the Student Discipline Committee hearing at which information is received (excluding deliberations). Admission of any other person to the hearing shall be at the discretion of the Student Discipline Committee and/or the dean of students or designee.

## Lawrence Technological University

9. In the case of Student Discipline Committee hearings involving more than one accused student, the dean of students or designee, at his/her discretion, may permit the Student Discipline Committee hearings concerning each student to be conducted either separately or jointly.
10. The complainant and the accused student have the right to be assisted by any advisor they choose, at their own expense. The advisor may be an attorney. The complainant and/or the accused are responsible for presenting his or her own information and, therefore, advisors are not permitted to speak or to participate directly in any hearings before the Student Discipline Committee. A student should select as an advisor a person whose schedule allows attendance at the scheduled date and time for the Student Discipline Committee because delays will not normally be allowed due to the scheduling conflicts of an advisor.
11. The complainant, the accused student, and the Student Discipline Committee may arrange for witnesses to present information to the Student Discipline Committee. The University will try to arrange the attendance of possible witnesses who are members of the University community, if reasonably possible, and who are identified by the complainant and/or accused student at least two (2) business days prior to the Student Discipline Committee hearing. Witnesses will provide information to and answer questions from the Student Discipline Committee. Questions may be suggested by the accused student and/or complainant to be answered by each other or by other witnesses, with such questions directed to the chairperson, rather than to the witness directly. This method is used to preserve the educational tone of the hearing and to avoid creation of an adversarial environment. Questions of whether potential information will be received shall be resolved at the discretion of the chairperson of the Student Discipline Committee, in consultation with the dean of students or designee.
12. Pertinent records, exhibits, and written statements (including Student Impact Statements) may be accepted as information for consideration by the Student Discipline Committee, at the discretion of the dean of students.
13. All procedural questions are subject to the final decision of the dean of students.
14. After the portion of the Student Discipline Committee hearing concludes in which all pertinent information has been received, the Student Discipline Committee shall determine by majority vote whether the accused student has violated each section of the Student Code that the student is charged with violating.
15. The Student Discipline Committee's determination shall be made on the basis of whether it is more likely than not that the accused student violated the Student Code.
16. Formal rules of process, procedure, and/or technical rules of evidence, such as are applied in criminal or civil court, are not used in Student Code proceedings.
17. There shall be a single verbatim record, such as a transcription or tape recording, of all hearings before a Student Discipline Committee (not including deliberations). Deliberations shall not be recorded. Transcriptions and/or tapes made during Student Discipline Committee hearings shall be the property of the University. These materials are confidential. They are made available in case of appeal and, upon request, to the Discipline Appeals Committee hearing the appeal.

## Lawrence Technological University

18. If the accused student, with notice, does not appear before a Student Discipline Committee hearing, the information in support of the charges shall be presented and considered even if the accused student is not present. If the accused student fails to attend the hearing, it shall be deemed that he or she denies all allegations. When appropriate, a sanction will be determined and the student will be notified in writing.

The Student Discipline Committee may accommodate concerns for the personal safety, well-being, and/or fears of confrontation of the complainant, accused student, or other witness during the hearing by providing separate facilities, by using a visual screen, and/or by permitting participation by telephone, videophone, closed circuit television, video conferencing, videotape, audio tape, written statement, or other means, where and as determined in the sole judgment of the dean of students to be appropriate.

### H. Sanctions

1. The following sanctions may be imposed upon any student found to have violated the Student Code:
  - a. **WARNING** – A notice in writing to the student that the student is violating or has violated institutional regulations.
  - b. **PROBATION** – A written reprimand for violation of specified regulations. Probation is for a designated period of time and includes the probability of more severe disciplinary sanctions if the student is found to violate any institutional regulation(s) during the probationary period.
  - c. **LOSS OF PRIVILEGES** – Denial of specified privileges for a designated period of time.
  - d. **LOSS OF ACADEMIC CREDIT** – Failing grade assigned for the course due to academic dishonesty.
  - e. **FINES** – Previously established and published fines may be imposed.
  - f. **RESTITUTION** – Compensation for loss, damage, or injury. This may take the form of appropriate service and/or monetary or material replacement.
  - g. **DISCRETIONARY SANCTIONS** – Work assignments, essays, service to the University, or other related discretionary assignments. (Such assignments must have the approval of the dean of students.)
  - h. **RESIDENCE HALL SUSPENSION** – Separation of the student from the residence halls for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
  - i. **RESIDENCE HALL EXPULSION** – Permanent separation of the student from the residence halls.
  - j. **UNIVERSITY SUSPENSION** – Separation of the student from the University for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
  - k. **UNIVERSITY EXPULSION** – Permanent separation of the student from the University.
  - l. **REVOCATION OF ADMISSION AND/OR DEGREE** – Admission to, or a degree awarded from, the University may be revoked for fraud, misrepresentation, or other violation of University standards in obtaining the degree, or for other serious violation committed by a student prior to graduation.
  - m. **WITHHOLDING DEGREE** – The University may withhold awarding a degree otherwise earned until the completion of the process set forth in this Student Code of Conduct, including the completion of all sanctions imposed, if any.
2. More than one of the sanctions listed above may be imposed for any single violation.

## Lawrence Technological University

3. Other than University suspension, expulsion, or revocation or withholding of a degree, disciplinary sanctions shall not be made part of the student's permanent academic record, but shall become part of the student's disciplinary record. Upon graduation, the student's confidential record may be expunged of disciplinary actions, other than residence hall expulsion, University suspension, University expulsion, or revocation or withholding of a degree, upon application to the dean of students. Cases involving the imposition of sanctions other than residence hall expulsion, University suspension, University expulsion, and revocation or withholding of a degree shall be expunged from the student's disciplinary record three (3) years after the student completes all requirements for graduation.
4. In situations involving both an accused student(s) (or group or organization) and a student(s) claiming to be the victim of another student's conduct, the records of the process and of the sanctions imposed, if any, shall be considered to be part of the education records of both the accused student(s) and the student(s) claiming to be the victim because the educational career and chances of success in the academic community of each may be impacted.
5. The following sanctions, in addition to those listed above, may be imposed upon groups or student organizations: loss of selected rights and privileges for a specified period of time, and/or deactivation/loss of all privileges, including University recognition, for a specified period of time.
6. In each case in which a student conduct officer determines that a student has violated the Student Code, the recommendation of the student conduct officer shall be considered by the dean of students in determining and imposing sanctions. In cases in which the Student Discipline Committee has been authorized to determine that a student has violated the Student Code, the recommendation of all members of the Student Discipline Committee shall be considered by the dean of students in determining and imposing sanctions. The dean of students is not limited to sanctions recommended by members of the Student Discipline Committee.
7. Following the Student Discipline Committee hearing, the dean of students shall advise the accused student(s), group, and/or organization (and complaining student who believes she/he was the victim of another student's conduct) in writing of the Committee's determination and of the sanction(s) imposed, if any. A copy of the notification will be retained in the student's disciplinary record. Cases involving suspension or expulsion will also be filed in the student's academic record.

### I. Appeals

1. A decision reached, or a sanction imposed, by the Student Discipline Committee may be appealed by the accused student(s) or complainant(s) to the Discipline Appeals Committee within seven (7) school days of the decision. Such appeals shall be in writing and shall be delivered to the dean of students or designee.
2. Composition: The Discipline Appeals Committee is composed of three (3) members: (a) the chair of the Faculty Senate; (b) the assistant provost for enrollment management; (c) the president of Student Government.
3. Except as required to explain the basis of new information, an appeal shall be limited to review of the verbatim records of the Student Discipline Committee hearing and supporting documents for one or more of the following purposes:

- a. To determine whether the Student Discipline Committee hearing was conducted fairly in light of the charges and information presented, and in conformity with prescribed procedures, giving the complaining party a reasonable opportunity to prepare and present evidence that the Student Code was violated, and giving the accused student a reasonable opportunity to prepare and to present a response to those allegations. Deviations from designated procedures will not be a basis for sustaining an appeal unless significant prejudice results.
  - b. To determine whether the decision reached regarding the accused student was based on substantial information; that is, whether the facts in the case, if believed by the fact finder, were sufficient to establish that a violation of the Student Code occurred.
  - c. To determine whether the sanction(s) imposed was appropriate for the violation of the Student Code that the student was found to have committed.
  - d. To consider new information sufficient to alter a decision or other relevant facts not brought out in the original hearing because such information and/or facts were not known to the person appealing at the time of the original Student Discipline Committee hearing.
4. If the Discipline Appeals Committee upholds an appeal, the matter may be returned to the original Student Discipline Committee for reopening of the Student Discipline Committee hearing to allow reconsideration of the original determination and/or sanction(s).
    - a. In cases involving appeals by students accused of violating the Student Code, the Discipline Appeals Committee may, upon review of the case, reduce but not increase the sanctions imposed by the Student Discipline Committee.
    - b. In cases involving appeals by persons other than the student(s) accused of violating the Student Code, the Discipline Appeals Committee may, upon review of the case, reduce or increase the sanctions imposed by the Student Discipline Committee.
  5. Following the appeal, the dean of students shall advise the accused student(s) in writing of the determination of the Discipline Appeals Committee and of the sanction(s) imposed, if any. A copy of the notification will be retained in the student's disciplinary record. Cases involving University suspension, expulsion, or revocation or withholding of a degree will be filed in the student's academic record.

### J. Exceptional Procedures

#### 1. Interim Suspension

In certain circumstances, the dean of students or designee may impose a University or residence hall suspension prior to the hearing before the Student Discipline Committee. Interim suspension is an action requiring that a student immediately leave the campus and University property.

- a. Interim suspension may be imposed only: (a) to ensure the safety and well-being of members of the University community or preservation of University property; (b) to ensure the student's own physical or emotional safety and well-being; or (c) if the student poses an ongoing threat of disruption of or interference with the normal operations of the University. During the interim suspension, the student shall be denied access to housing facilities and/or the campus (including classes) and/or all other University activities or privileges for which the student might otherwise be eligible, as the dean of students or designee may determine to be appropriate.
- b. Any student who is suspended on an interim basis and returns to the campus and University property during the suspension shall be subject to further disciplinary action

## Lawrence Technological University

and may be treated as a trespasser. Permission to be on campus for a specific purpose (e.g., to take an exam, to consult with the dean of students, or to participate in the disciplinary procedures) may be granted in writing by the dean of students or designee.

2. **Suspension from the Housing Facilities**  
The director of residence life or the dean of students or designee may, when charges are served, suspend an accused student(s) from the housing facilities pending the hearing and determination thereof, whenever the continued presence of such a student would constitute a danger to the student or to the safety of persons or property in the housing facilities, or would pose a threat of disruptive interference with the normal conduct of housing facility activities and functions, or the seriousness of the charges warrants such action. The dean of students or designee shall grant an immediate review (by the end of the next business day after the suspension) on request of any student so suspended with respect to the basis for such a suspension, at which time the suspended student may have the right to present statements tending to show that the basis for the suspension from the housing facilities does not exist. Suspension may apply to all housing facilities, an individual residence hall/apartment, or any portion thereof.
3. **Residence Hall/Temporary Reassignment and Restriction from Facilities**  
The director of residence life or the dean of students or designee may temporarily reassign a resident to another facility and/or restrict a resident from specific campus facilities pending an investigation and/or hearing whenever the continued presence of a resident in a particular campus facility would constitute a danger to the student or to the safety of persons or property in the housing facilities and campus facilities, or the seriousness of the allegations warrants such action. The director of residence life shall grant an immediate review (by the end of the next business day after the temporary reassignment and/or restriction) on request of any resident so reassigned and/or restricted with respect to the basis for such a reassignment and/or restriction.
4. **Temporary Restriction from Personal Contact**  
The director of residence life or the dean of students or designee may temporarily restrict a student from any personal, verbal, written, telephone, electronic, and third-party contact with another person pending an investigation and/or hearing whenever the contact could constitute a danger to the person or to the safety of the person or property, or the seriousness of the allegations warrants such action. Any student so restricted may obtain an explanation of the basis for such restriction upon request.
5. **Withdrawal Prior to Student Conduct Proceedings**  
The student who withdraws or fails to return to the University while disciplinary action is pending will be ineligible for readmission until the outstanding matter is resolved. The University reserves the right to formally restrict individual(s) from the campus grounds while such action is pending. Any further readmission would require an appeal in writing to the dean of students or designee and approval by the dean of students or designee.

### **K. Interpretation and Review**

1. Any question of interpretation regarding the Student Code shall be referred to the dean of students or his/her designee for final determination.
2. The Student Code will be reviewed every three (3) years under the responsibility of the dean of students with the input of an advisory team.

# Lawrence Technological University

## NON-DISCRIMINATORY POLICY

Lawrence Technological University adheres and conforms to all federal, state, and local civil rights regulations, statutes, and ordinances. No person, student, faculty, or staff member will knowingly be discriminated against relative to the above statutes. Lawrence Technological University is an equal opportunity employer. Direct inquiries regarding non-discriminatory policies should be directed to the Division of Student Affairs, 248.204.4100.

## SEXUAL HARASSMENT POLICY

It is the policy of Lawrence Technological University to maintain an environment free of sexual harassment for students, faculty, staff, or any other constituency. Sexual harassment is contrary to the standards of the University community. It diminishes individual dignity and impedes equal employment, educational opportunities, and equal access to freedom of academic inquiry. It will not be tolerated at Lawrence Technological University.

### What Is Sexual Harassment?

Harassment on the basis of sex is a violation of the Elliott-Larsen Civil Rights Act; Michigan Civil Service Commission Rules; the Office of Federal Contract Compliance regulations; and Title VII of the Civil Rights Act of 1964. According to guidelines issued by the Equal Employment Opportunity Commission in 1980,

“Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature, even between people of the same sex constitutes sexual harassment when:

1. Submission to such conduct or communication is made either explicitly or implicitly a term or condition of an individual’s employment, education, or participation in a University activity; or
2. Submission to, or rejection of, such conduct or communication by an individual is used as the basis for decisions affecting an individual’s employment, education, or participation in a University activity; or
3. Such conduct or communication has the purpose or effect of unreasonably interfering with an individual’s work or educational performance or of creating an intimidating, hostile, or offensive employment or education environment.

“Sexual harassment can also exist when there has been no tangible job detriment (i.e., a significant change in employment status, such as hiring, firing, etc.). Courteous, respectful, pleasant, non-coercive mutual interactions between employees are not considered sexual harassment.

“Personal (i.e., intimate) relationships that occur between persons who are in a supervisory-subordinate work relationship must be reported to the next level of management. In such situations, the department will take appropriate action.” (According to the United States Supreme Court in *Oncale v. Sundowner Offshore Services, Inc.*, No. 96-569, 1998.)

Although these guidelines, based on Title VII, apply specifically to sexual harassment in the workplace, they should be interpreted to apply to students as well under Title IX of the 1972 Education Amendments. As has been pointed out by the National Advisory Council on Women’s Educational Programs (NACWEP), there is a serious problem “of harassment by gatekeepers – those who teach required courses or who have the authority to make critical decisions about a student’s advancement. The extraordinary importance of such positions lends an exceptional degree of significance to every interaction with students, and makes sexual harassment of all types particularly harmful.”



# Lawrence Technological University

## Common Types of Harassment

The NACWEP describes five classifications of harassment commonly reported by students and working women.

1. Generalized sexist remarks or behavior (e.g., "This is a man's job," "That's women's work," "Women/men are incompetent at/are better suited to..."). Leering or staring, crude sexual remarks, off-color jokes, suggestive stories, and other related behaviors are also grouped in this category.

"This type of behavior is close to racial harassment in appearance; the sentiments or actions involved are often fiercely anti-male or anti-female and are not intended to lead to sexual activity. They are directed to the (individual) because of gender and can often affect whole classrooms; the offense may be 'generalized' both by its nature and its audience. There can be an inherent sexual content in or underlying such remarks that establishes a tone which in its awkwardness is more damaging than many overt acts." (Frank J. Till, "Sexual Harassment: A Report on the Sexual Harassment of Students, the National Advisory Council on Women's Educational Programs, August 1980." Reprinted from *Sexual Harassment: Definition and Prevention*, State University of New York at Binghamton, 1988. Reprinted with permission.)

2. Inappropriate and offensive sexual advances (e.g., requests for social or sexual encounters, often accompanied by touching).

This type of harassment, while not necessarily threatening, usually makes the recipient uncomfortable. This discomfort may cause the recipient to avoid the perpetrator in the future, thus limiting his or her ability to function properly in the academic environment. Discomfort caused by harassment will almost certainly affect future professional and personal relationships.

3. Solicitation of sexual activity or other sex-related behavior by promise of rewards (e.g., grades, promotions, promises of greater opportunities, etc.).

"This category, in its extreme, literally amounts to an attempt to purchase sexual behavior. In its more blatant forms this type of behavior can be prosecuted as a criminal act ... even 'banter' along this vein may cause harm. Students may be mystified and confused by the interaction due to the power of the initiator. This is especially the case where the student propositioned is young or naive, and may fail to fully grasp the significance of the request." (Till, "Sexual Harassment," 16.)

4. Coercion of sexual activity by threat of punishment (e.g., refusal to comply with a sexual request or invitation results in a threat of failure, loss of job or promotion, or access to academic referrals).

"What is at stake is often more than one grade or a single recommendation – too frequently it is access to a discipline and so a career is jeopardized." (Till, "Sexual Harassment," 17.)

5. Sexual crimes and misdemeanors (e.g., criminal sexual assault [rape, indecent exposure, etc.]) across authority lines (faculty/student or employer/employee) or among colleagues and peers.

"This category refers to acts which, if reported to police authorities, would be considered crimes or misdemeanors." (Till, "Sexual Harassment," 22.)

## Preventing Sexual Harassment

# Lawrence Technological University

Although the ultimate burden for prevention of harassment rests with those in supervisory positions, others should be aware that their actions may be construed as harassment. Following are some suggestions to supervisors, staff, faculty, and students for preventing sexual harassment, regardless of who is the perpetrator and who is the recipient.

- Avoid sexist remarks, off-color stories, or lewd jokes.
- Keep doors open when possible.
- Ask someone to accompany you if you suspect that you may be harassed.
- Make it plain that your intentions are not sexual in nature.
- Make clear, through your behavior, conversation, and actions, that you find sexual harassment offensive and inappropriate.

## Combating Sexual Harassment

Employees, students, or faculty who feel they are experiencing this form of discrimination should:

1. *Say No Clearly.* Inform the harasser that his or her attentions are unwanted. If the behavior persists, write a memo to the harasser asking him or her to stop; keep a copy.
2. *Document the Harassment.* Record the date, time, and place of each incident. Keep a copy of this record at home.
3. *Get Emotional Support.* Talk to your family and friends.
4. *Document Work Evaluations.* Keep copies of performance evaluations and memos that attest to the quality of your work.
5. *Identify Witnesses/Other Victims.* You are probably not the first person who has been mistreated by this individual. Ask around; you may find others who will support your charge. (Sexual Harassment: What Every Working Woman Needs to Know, [cs.utk.edu/~bartley/other/pto5.html](http://cs.utk.edu/~bartley/other/pto5.html).)

The least effective way to deal with sexual harassment is to ignore it. Unless the recipient of unwanted sexual attention takes some kind of action (whether formal or informal), the harasser is very likely to continue or even escalate the harassing behavior.

The following suggestions for combating sexual harassment reflect a variety of options, ranging from informal methods to formal procedures.

## Confidential Counseling

Students may obtain information about or assistance with sexual harassment issues from the Office of the Dean of Students. Staff, faculty, and administrators should seek help from the Office of Human Resources. University representatives can advise and support complainants and witnesses in a confidential setting. The complainant, alleged harasser, and any witness shall be informed that all records of complaints, statements, interviews, contents of meetings, results of investigations, and any other relevant materials will be kept confidential by the employer, except where disclosure is required by a grievance process or pursuant to a legal action.

Unless otherwise authorized by law, disclosure or publication by any person of the complaint, the facts, or the identity of involved parties or witnesses is prohibited and subject to disciplinary action. Discussions with representatives of the above-mentioned offices will not be considered official reports to the University and will not, without additional action by the complainant, result in intervention or corrective action. When intervention and discipline result against the alleged harasser, appropriate reference will be made in his or her file to protect the privacy of the complainant and witnesses.

# Lawrence Technological University

## Informal Resolution Process

At the complainant's option, a sexual harassment report or complaint will be taken from staff by the Office of Human Resources and from students by the Office of the Dean of Students or any dean, director, department head, the director of residence life, and/or their designees. Each college or other University organization will designate both men and women to receive complaints.

The person who receives a sexual harassment report or complaint will advise the person who makes the complaint about the informal and formal resolution alternatives available. At the complainant's option, the person receiving the complaint can:

- provide information about sexual harassment;
- help the complainant deal directly with the alleged offender;
- assist with or mediate a resolution of the problem within the complainant's unit; and/or
- help the complainant prepare a written complaint and pursue formal action.

Informal resolution measures should address the particular circumstances. No action will be taken against the alleged offender if the resolution is kept informal. Any discussion with the accused individual should, unless the provost or director of human resources specifically decides otherwise, include the supervisor of accused staff, faculty, or administrator. Any discussion with an accused student will include a member of the Division of Student Affairs and the student's department chair.

## Formal Resolution Process

Either subsequent to or instead of following the informal process, a complainant may elect to make a formal charge of sexual harassment. The University will investigate all formal charges of sexual harassment and take appropriate actions pursuant to the results of the findings.

There are several mechanisms available to pursue a formal charge, and their availability depends on the status of the complainant:

1. A student should notify the Office of the Dean of Students. If this is not possible, then the student may contact the Offices of the President or Provost.
2. A member of the staff, faculty, or administration may notify his or her supervisor, a department head or dean, the Offices of the President or Provost, the Office of Human Resources, or the Office of the Dean of Students. A student-employee may also notify any of these.
3. Contract employees should follow the same procedure followed by staff, faculty, and administrators.

Call the Office of Civil Rights at 216.522.4970 to make a sexual harassment complaint. Report all incidents of criminal sexual assault to the Department of Campus Safety at 248.204.3945 or the Southfield Police Department at 248.354.4720.

## Counseling Can Help

Sexual harassment undermines the confidence of a student or employee and adversely affects his/her attitude and job or academic performance. All students and employees may talk, confidentially, to trained counselors in the Division of Student Affairs if they believe they have been sexually harassed.

Counselors can be an immediate source of help by:

## Lawrence Technological University

- encouraging the victim to report the incident(s);
- acting as a liaison between the victim and management;
- helping the victim readjust to the work or school environment; and
- helping the victim regain confidence. (Reprinted from *Where Do You Draw the Line? Sexual Harassment in the Workplace*, American Counseling Association, 4. Reprinted with permission. No further reproduction authorized without written permission of American Counseling Association.)

Counselors can also help management develop a proactive approach to dealing with sexual harassment issues by incorporating discussions on the topic during workshops, seminars, and/or training sessions.

### **PARTICIPATION IN THE U.S. DRUG PREVENTION PROGRAM**

Lawrence Technological University is committed to promoting and maintaining a work and academic environment that is free from illegal use of alcohol and drugs, in accordance with all federal, state, and local laws as well as the Drug Free Schools and Campus Safety Act. Lawrence Technological University is in compliance with all provisions of the U.S. Department of Education Drug Prevention Program, which is a condition of the University's eligibility to receive federal funds or any other form of federal financial assistance.

Applicable policies are provided in section 701 of the *Employee Handbook*, section 3.14 of the *Faculty Handbook*, and in the Policies, Procedures, and Regulations section of the *Student Handbook*. The University specifically prohibits the unlawful possession, use, or distribution of illicit drugs and alcohol by students and employees on its property or as a part of its activities (except at University functions at which alcohol use is approved). Use of alcoholic beverages at any University function requires the approval of the provost or designee.

Employees, students, and campus visitors age 21 years or older, who consume alcohol at University functions or while on University business where such use is approved, are expected to use alcohol responsibly and not engage in illegal, unprofessional, or disruptive behavior. Violators will be subject to penalties, which may include expulsion or separation from the University. Any employee or student found to be in violation of University policy regarding drugs or alcohol will be subject to disciplinary action up to and including dismissal or expulsion in accordance with applicable disciplinary procedures.

Possession, use, or distribution of illicit drugs, possession or consumption of alcoholic beverages by individuals under 21 years of age and distribution of alcohol without a license or permit issued by a competent legal authority are violations of local, state, and federal laws. It is the policy of the University to cooperate fully in any prosecution based on violation of these laws.

A variety of serious health risks are associated with the use of illicit drugs and the abuse of alcohol. These include permanent damage to the liver, brain, and other vital organs, heart damage or malfunction, including sudden death, and accidents caused by impaired judgment or abilities. Individuals who may have a drug dependency or alcohol abuse problem are advised to contact the Oakland County Drug and Substance Abuse Center, 248.858.5200.

### **LIABILITY DISCLAIMER**

Lawrence Technological University shall not be liable for any injuries to, or property damage or loss suffered by, any student regardless of cause. This disclaimer of liability shall apply to, but not by way of limitation, the following:

## Lawrence Technological University

- Any injury or damage incurred on property owned by or under the control of the University, or its subsidiaries, such as classrooms, apartments, or other housing, any other structures, all common areas and grounds, and vehicles;
- Any injury or damage incurred as a participant, spectator or otherwise, in any intramural or intercollegiate or other event or contest, athletic or otherwise, or while in transit thereto or therefrom;
- Any injury or damage suffered while engaged in or attending a classroom or related activity, whether required or elective, and regardless of cause;
- Any injury or damage suffered by reason of theft, fire, damage by the elements, or other casualty;
- Any injury or damage suffered by reason of any act or omission of any University trustee, officer, member of the faculty or staff, employee, contractor, or student.
- By applying for admission or readmission to the University, or by continuing their enrollment with the University for a subsequent semester, students accept the foregoing disclaimer and agree to be bound thereby. Emergency referrals are made to community agencies. Any expenses incurred are the responsibility of the student.

## **Degrees and Graduation**

Lawrence Technological University offers curricula leading to the following degrees and certifications. (For information on graduate degrees, see the *Graduate Catalog* ([www.ltu.edu/futurestudents/graduate/graduate\\_catalog.asp? wds=gr](http://www.ltu.edu/futurestudents/graduate/graduate_catalog.asp? wds=gr)):

### **UNDERGRADUATE DEGREES**

#### **Associate of Arts**

Radio and Television Broadcasting

#### **Associate of Science**

Chemical Technology  
Communications Engineering Technology  
Construction Engineering Technology  
General Studies  
Manufacturing Engineering Technology  
Mechanical Engineering Technology

#### **Bachelor of Arts**

Architectural Studies  
English and Communication Arts

#### **Bachelor of Fine Arts**

Game Art  
Graphic Design  
Interaction Design

#### **Bachelor of Interior Architecture**

#### **Bachelor of Science**

Architecture  
Audio Engineering Technology  
Biomedical Engineering  
Business Administration  
Chemical Biology  
Chemistry  
Civil Engineering  
Computer Engineering  
Computer Science  
Construction Management  
Electrical Engineering  
Engineering Technology  
Environmental Chemistry  
Humanities  
Industrial Design  
Industrial Operations Engineering

# **Lawrence Technological University**

Information Technology  
Mathematics  
Mathematics and Computer Science  
Mechanical Engineering  
Media Communication  
Molecular and Cell Biology  
Physics  
Physics and Computer Science  
Psychology  
Robotics Engineering  
Transportation Design

## **Pre-Professional Programs (non-degree)**

Pre-Dental  
Pre-Law  
Pre-Medical  
Premedical Studies

## **GRADUATE DEGREES**

**Direct-Entry Master of Architecture**

**Master of Architecture** (also online)

**Master of Arts in Environmental Graphic Design**

**Master of Business Administration** (also online)

**Master of Civil Engineering**

**Master of Construction Engineering Management**

**Master of Educational Technology** (also online)

**Master of Engineering in Manufacturing Systems**

**Master of Engineering Management** (also online)

**Master of Interior Design**

### **Master of Science**

Architectural Engineering  
Automotive Engineering  
Civil Engineering  
Computer Science  
Electrical and Computer Engineering  
Industrial Engineering (also online)  
Information Systems

# **Lawrence Technological University**

Mechanical Engineering  
Mechatronic Systems Engineering  
Technical and Professional Communication

## **Master of Science Education**

## **Master of Urban Design**

## **Doctor of Business Administration**

## **Doctor of Engineering in Manufacturing Systems**

## **Doctor of Engineering in Mechanical Engineering**

## **Doctor of Philosophy in Civil Engineering**

## **CERTIFICATES**

Lawrence Tech also awards a variety of undergraduate and graduate certificates.

### **Undergraduate**

Building Information Model and Computer Visualization (online)  
Computer Science  
Electrical Power Systems  
Embedded Systems  
Entrepreneurial Skills  
Industrial/Organizational Psychology  
Technical and Professional Communication  
Television and Video Production

### **Graduate**

Aeronautical Engineering  
Bioinformatics  
Electrical Power Systems  
Energy and Environment Management  
Energy Engineering  
Fire Engineering  
Instructional Design, Communication, and Presentation  
Instructional Technology  
Integrated Project Delivery  
Interdisciplinary Sustainability  
Manufacturing Systems  
Manufacturing Systems for the Defense Industry  
Nonprofit Management and Leadership (also online)  
Project Management (also online)  
Technical and Professional Communication  
Telecommunications Engineering  
Workplace Technology (also online)  
Writing for the Digital Age



# Lawrence Technological University

## HONORS PROGRAM

High-achieving students are invited to participate in the Lawrence Tech Honors Program. Incoming first-year students with a 3.5 minimum high school GPA and a minimum 24 ACT composite (or SAT equivalent) qualify for the Honors Program. (Transfer students are not eligible.) Lawrence Tech offers honors course work in either stand-alone honors courses, regular courses with an "honors option," or special sections of standard courses. The Honors Program encompasses 20 credit hours of the core course work required of all undergraduates and six credit hours of advanced course work in the student's chosen major. The completion of honors course work leads to the distinction of graduating "With Honors." This distinction is noted on the student's transcript and diploma.

The Honors Program aims to:

- serve and challenge high-achieving students through rigorous course work;
- encourage students to enhance and diversify their college experience by taking courses, including interdisciplinary projects, beyond the requirements of their majors;
- enhance the intellectual and social climate for high-achieving students through participation in the University's Honors Society;
- develop students' leadership potential through academic achievement and service to the University and the community; and
- provide one-on-one advising through the Honors Program coordinator to aid the student as he/she prepares to enter his/her professional field or graduate studies.

## SCHOLARS PROGRAM

Students committed to succeeding academically while building leadership skills are invited to apply to participate in the Lawrence Tech Scholars Program. Scholars motivate each other within a comprehensive network of academic, peer-driven support. Student-led service projects at Lawrence Tech and in the broader community enrich undergraduate life for Scholars, while social events provide enjoyment outside of the classroom.

Scholars share a dedicated study room on campus and participate in a social, positive peer network focused on the transition from the classroom to internships.

Interested students can apply at [www.ltu.edu/scholars/apply.asp](http://www.ltu.edu/scholars/apply.asp).

## DOUBLE MAJORS

Students who want to broaden and enhance their educations have the opportunity to earn majors in two areas in a reasonable time frame. In order to earn a double major, students simply complete all of the course requirements for both majors. Because of overlapping core course requirements and open electives in both majors, a double major can be earned, for example in mathematics and humanities, with as few as 135 credit hours. The number of credit hours required varies depending on the choice of majors.

Interested students are encouraged to consult the department chairs of the two majors being considered. Careful planning and course scheduling will facilitate the completion of both majors in the shortest time.

## UNDECLARED MAJORS

# Lawrence Technological University

The University welcomes students interested in exploring their educational options prior to declaring a major. While completing general education courses common to all degree programs, undeclared students may also select introductory courses in various disciplines during their first year as a way to learn more about these areas of study. Academic advisors and career services professionals are available to assist students in selecting the major best suited to their interests and abilities.

## **SIMULTANEOUS ENROLLMENT**

Students may be simultaneously enrolled in appropriate associate and bachelor's degree programs. Typical combinations are:

AS in Chemical Technology/BS in Chemistry

AS in General Studies/BS in any discipline

AS in Manufacturing Engineering Technology/BS in Engineering Technology

AS in Mechanical Engineering Technology/BS in Engineering Technology

## **THE LEADERSHIP PROGRAM**

Lawrence Tech works to ensure all students develop their leadership skills, with an emphasis on character, professionalism, integrity, and teamwork. As part of their academic program, all Lawrence Tech undergraduates are required to complete a comprehensive leadership curriculum.

Lawrence Tech's undergraduate leadership curriculum includes:

University Seminar

Leadership Models and Practices

Leadership Seminar Series

Leadership Capstone

The Office of Leadership Programs directs the implementation and successful completion of the undergraduate leadership curriculum and coordinates with academic programs to promote leadership development and practice in the classroom. The office also coordinates co-curricular and extracurricular activities, such as diversity awareness, study abroad, service learning experiences, and volunteer opportunities for students.

For more information on the Leadership Program, visit [www.ltu.edu/leadership](http://www.ltu.edu/leadership) or call the Office of Leadership Programs at 248.204.2414.

## **THE CORE CURRICULUM**

The distinctive Lawrence Tech Core Curriculum provides a comprehensive, interactive engagement with writing, speaking, literature, history, philosophy, mathematics, science, and the arts. The Core is structured to give students an intellectual experience in common with fellow students through shared reading, directed discussion, group presentations, and problem-solving teamwork. Unlike general education requirements selected "cafeteria-style," the carefully designed content and distinctive delivery of Lawrence Tech's Core Curriculum ensure engagement at the highest level with the ideas and texts that have shaped human civilization. Instead of listening to lectures, students learn actively through lively discussion and engagement with their peers.

The Core learning community, shared with students from all majors, is built on:

## Lawrence Technological University

- Four courses in humanities, based on reading the great books and experiencing the great art of the world's civilizations:
  - Foundations of the American Experience
  - Development of the American Experience
  - World Masterpieces 1
  - World Masterpieces 2
- Two courses in communication, written, oral, and visual:
  - English Composition
  - Technical and Professional Communication
- Two courses in mathematics, where what is studied depends on the major selected
- Two courses in the natural sciences, including laboratory experience
- One upper-division elective in the humanities or social sciences, to add depth to the educational experience.

In face-to-face contact with experienced, notable scholars, students gain:

- The ability to read and analyze challenging texts
- The poise to articulate ideas orally and in writing
- The capacity to evaluate conflicting ideas
- The savvy to seek alternative solutions to problems in many fields
- The stamina to succeed in difficult projects
- The experience of working in, and leading, teams
- An understanding of the past and the role of a citizen in a free society
- The competency to simplify complex problems through the manipulation of symbols
- The discipline to apply scientific principles to improve understanding
- The confidence to be creative

Designed to promote excellence, the Core Curriculum seeks to prepare students to take a leadership role in the diverse world in which they will learn, build their careers, and contribute to their communities. The Core's blend of deep knowledge, broad understanding, and analytical thinking seeks to provide the confidence that will help students determine their life's course, make meaningful contributions to the lives of others, and achieve success in their professional fields.

The development of the scientific method is one of the hallmarks of Western thought. The Natural Sciences Core exposes students to a full year of rigorous training in one or more of the natural sciences, including at least one laboratory course. The value of this exposure is not limited to the technical skills acquired. No matter what major is selected, the goal is to understand more fully scientific thinking, its limitations, and its implication for other disciplines.

In the Humanities Core, students read many of the best books written in science, literature, philosophy, and politics. They discuss those original texts, defend their interpretations of them, and analyze and evaluate the ideas under discussion. They are expected to write clear, well-reasoned papers about what they've read and discussed. Students will learn the value of editing and perfecting what they write, working in teams, and presenting ideas orally.

# Lawrence Technological University

In the Mathematics Core, students work to develop both mastery of skills and an understanding of the impact of mathematics on Western culture. Beyond being able to perform basic arithmetical operations, students will be expected to understand the use of symbols to represent numbers, manipulate those symbols, and use those skills to solve complex problems. The goal is to understand relationships within data through equations, inequalities, and graphs. Students are exposed to higher-level abstraction through the concept of functions and their manipulation, and to calculus, including its impact on the development of science and Western thought.

## REQUIREMENTS FOR GRADUATION

The University reserves the right to modify its graduation and other academic requirements as may seem necessary from time to time. It is obligated only during the academic year of the student's registration by requirements published in the *Undergraduate Catalog* for that year.

### Core Requirements

Lawrence Technological University is a focused, technologically oriented university which places emphasis on preparing students for careers in architecture and design, communication, computer science, engineering, the humanities, management, mathematics, science, and technology. Underlying specific program objectives is the principle that all graduates of the University, regardless of their major area, should receive a liberal education that prepares them to contribute as citizens and enlightened professionals.

The undergraduate Core requirements ensure that students interact with students and faculty in program categories other than their major and obtain both breadth and depth in the humanities, social sciences, mathematics and analysis, and the natural sciences, consistent with the basic educational philosophy of the University.

These requirements are summarized by six basic statements that apply to all baccalaureate curricula:

1. All graduates must be literate and skilled in communication, including basic English composition and specialized communication appropriate to their individual major programs;
2. All graduates must be aware of the diverse origins of our culture and must demonstrate both breadth and depth in an area of the arts and humanities;
3. All graduates must be aware of the foundations of our society and the development of social issues;
4. All graduates must be aware of the scientific understanding of the natural world, including laboratory experience;
5. All graduates must have analytical skills consistent with the technological focus of the University, including mathematics and the use of computers in their major fields;
6. All graduates must have a cohesive major program that integrates their basic education with both theory and practical applications in an area of interest to the University faculty.

### Curriculum Requirements

Students who enter the University as freshmen (less than 30 hours of transfer credit) seeking a baccalaureate degree, must satisfy the Core requirements through completion of the following course sequences. (Students who transfer to Lawrence Tech with more than 30 semester hours should follow the transfer procedures outlined in the Admission to the University section of this *Catalog*.) The credits shown are the minimum required to satisfy requirements in a category.

# Lawrence Technological University

## Communication

English Composition	3 credits
Technical and Professional Communication	3 credits

## Humanities and Social Sciences

Foundations of the American Experience and Development of the American Experience	6 credits
World Masterpieces 1 and 2	6 credits
Additional social science elective or course specified for a major	3 credits
Junior- or senior-level elective	3 credits

*Minimum Communication, Humanities,  
and Social Sciences TOTAL* 24 credits

## Mathematics and Analysis

BS majors: Mathematics through basic calculus	7 credits
Non-BS majors: Demonstration of competency in use of the computer in the major field	4 credits

## Natural Sciences

Two Natural Science courses	6 credits
Science laboratory	1 credit

*Minimum Natural Sciences  
and Mathematics TOTAL* 11 –14 credits

*Minimum Core Requirements TOTAL* 38 credits

Degrees are awarded to candidates who have fulfilled the following requirements:

- Satisfactory completion of all requirements in one of the degree programs as set forth in the *Catalog*. Any student required to take Basic Studies courses (course level zero) will receive credit hours and grade points for such courses, but the credit hours earned for these Basic Studies courses will not be included in the total hours required for graduation;
- Minimum GPA of 2.0 in the major;
- Minimum GPA of 2.0 in all credit hours earned at Lawrence Tech;
- Completion at Lawrence Tech of the last two semesters of work for a degree
  - For Associate degrees, this is a minimum of 24 credit hours, including 12 hours in the specialty courses of the chosen curriculum;
  - For Bachelor's degrees, this is a minimum of 30 credit hours, including 14 hours in the student's major;
- Submission of a Petition to Graduate approximately one year preceding the date of expected graduation. Contact Enrollment Services/Office of the Registrar for specific graduation petition due dates. A new petition must be submitted in the event requirements for graduation are not completed within one academic year of the submission of the petition.
- Full payment of all financial obligations to the University;

# Lawrence Technological University

- Successful completion of the writing proficiency examination.

## Degree/Diploma Honors

Diploma honors will be granted to degree recipients on the basis of the student's record for all course work in the degree program at Lawrence Tech. Only courses taken at the University qualify for honor point credits.

For Associate degrees, transfer students must have completed a minimum of 30 semester hours at Lawrence Tech to be eligible for diploma honors.

For Bachelor's degrees, a transfer student must have completed a minimum of 60 semester hours at Lawrence Tech to be eligible for diploma honors.

The words *Cum Laude* will be inscribed on the diploma if the graduate has earned a GPA of at least 3.25.

The words *Magna Cum Laude* will be inscribed on the diploma if the graduate has earned a GPA of at least 3.5.

The words *Summa Cum Laude* will be inscribed on the diploma if the graduate has earned a GPA of at least 3.75.

## Certificates/Minors/Concentrations

A minimum GPA of 2.0 is required in certificate, minor, and concentration courses.

## COURSE NUMBER AND LEVEL

On the pages of course descriptions that follow, each course is identified by an alphanumeric course number. The alphabetic prefix represents the subject area.

### College of Architecture and Design

Architectural Engineering	EAE
Architecture and Design	ARC
Fine Arts	ART
Game Art	GAM
Industrial Design	IDD
Interior Architecture/Design	ARI
Transportation Design	ATD

### College of Arts and Sciences

Biology	BIO
Botany	BOT
Chemistry	CHM
Communication	COM
Creative Writing	CRW
English as a Second Language	ESL
Forensic Science	FSC
Geology	GLG
Language and Literature	LLT
Leadership	LDR

# Lawrence Technological University

Master of Education Technology		MET
Mathematics and Computer Science/Math Co-op		MCS
Media Communication		MCO
Natural Science Co-op		SCO
Physical Science		PSC
Physics		PHY
Psychology		PSY
Radio and Television Broadcasting		RTS
Science Education		SCE
Spanish	SPN	
Social Science		SSC
Study Abroad		SAP

## College of Engineering

Architectural Engineering		EAE
Biomedical Engineering	BME	
Biomedical Engineering Technology		BMT
Civil Engineering		ECE
Construction Engineering Technology		TCE
Electrical and Computer Engineering		EEE
Electrical Contracting Technology		TEC
Electrical Engineering Technology		TEE
Engineering Co-Op		ECO
Engineering, General		EGE
Engineering Tech Co-Op		TCO
Fire Engineering		EFE
Industrial Engineering Technology		TIE
Industrial/Operations Engineering		IOE
Mechanical Engineering		EME
Mechanical Engineering Technology		TME
Mechatronics Engineering		MSE
Robotics Engineering		ERE
Technology Alternative Energy		TAE
Technology Audio Systems		TAS
Technology Operations Management		TOM

## College of Management

Accounting		ACC
Dissertation		DIS
Doctor of Business Administration		DBA
Finance		FIN
Global		GLO
Global Leadership Management		GLM
Health IT Management		HTM
Human Resource Management		HRM
Information Technology		INT
Management		MGT
Management Information Systems		MIS

# Lawrence Technological University

Marketing	MKT
Operations Management	OPM
Research	RES

The first number following the alphabetic prefix indicates the academic level of the course:

- 0 = Basic Studies
- 1 = Freshman
- 2 = Sophomore
- 3 = Junior
- 4 = Senior
- 5 = Senior/Grad
- 6 and above = graduate level

Basic Studies courses (course level zero) do not provide degree credit. The last of the four numbers normally indicates the semester hours of credit assigned to the course. For example, ARC4653 carries three hours credit.

## REQUIREMENTS FOR GRADUATION/GRADUATION DEADLINE

Petitions to Graduate for each semester have specific due dates:

Expected date of graduation	Petition to Graduate due date
May	December 15th
July	December 15th ( <i>if attending Commencement</i> ) or April 15th ( <i>if NOT attending Commencement</i> )
December	July 15th

It is the student's responsibility to be aware of these dates and adhere to them. Petition to Graduate forms can be downloaded at [http://www.ltu.edu/registrar/office/graduation\\_petition.asp](http://www.ltu.edu/registrar/office/graduation_petition.asp). Students may submit their forms to the DTE Energy One-Stop Center in the A. Alfred Taubman Student Services Center, fax them to 248.204.2228, or scan and email them to [graduation@ltu.edu](mailto:graduation@ltu.edu) or [enrollment@ltu.edu](mailto:enrollment@ltu.edu).

Processing Petitions to Graduate after their due date, if approved by Enrollment Services/Office of the Registrar, requires that an additional processing fee be assessed to the student. Further, availability of caps, gowns, and diplomas in time for Commencement cannot be guaranteed.

Students must also pay a graduation fee, which is non-refundable after one academic year. If students do not complete their graduation requirements as planned within one academic year, a new Petition to Graduate and graduation fee must be submitted.

The University reserves the right to modify its graduation and other academic requirements as may be deemed necessary. It will be obligated only during the academic year of the student's registration by requirements published in the *Undergraduate Catalog* for that year.

## CATALOG OF ENTRY – LIMITATIONS

Although graduation requirements of the University may change while a student is enrolled, students are normally expected to meet the graduation requirements outlined in the *Catalog* that is in effect at the time they matriculate, as long as the courses are still offered by the University. Substitutions may be made for required courses that may no longer be available. However, if the new graduation requirements may be



## **Lawrence Technological University**

adapted to a student's current course of study without increasing his or her credit hour requirements or existing prerequisites, the new requirements shall prevail.

Students interrupting their studies for three calendar years or more must reapply for admission (see the Admission to the University section, Transfers within the University/Interruption of Studies, in this *Catalog*). If readmitted, the *Catalog* in effect at the time of readmission is used to determine graduation requirements.

## **College of Architecture and Design**

### **Dean**

Glen S. LeRoy, FAIA, FAICP  
A129, 248.204.2805

### **Associate Dean**

Amy Green Deines, Assoc. AIA, IIDA  
A129, 248.204.2802

### **ABOUT THE COLLEGE OF ARCHITECTURE AND DESIGN**

The College of Architecture and Design at Lawrence Technological University is among the 30 oldest and the 10 largest schools of architecture in the United States. It was founded on the conviction that universal truths underlie all existence and provide the scientific and aesthetic foundation for the study of architecture and design as it relates to the service of humankind. These incorporate technology, the physical and social sciences, the arts, economics, and law.

Above all, Lawrence Tech's architecture and design curricula emphasize the human condition and focus on humankind as the primary beneficiary of all artistic and technological endeavors.

No single style or philosophy, other than the pursuit of excellence in the comprehensive response to human needs, dominates the curricula of the College of Architecture and Design. To this end, faculty members are drawn from a broad spectrum of creative and technical backgrounds. Not only does this maximize the students' exposure to a variety of differing philosophies and ideals, but it also offers the student contact with respected practicing professionals who are leaders in their fields of endeavor.

Obviously, architecture and design cannot be created in isolation. Their full success depends on supportive harmony among all creative disciplines. Therefore, Lawrence Tech emphasizes a study of architecture and design that recognizes the interrelationship of technical, economic, social, environmental, and philosophical factors. The college rejects any isolated or unilateral science, philosophy, or art that inhibits the full development of a student's skills and ideals. Lawrence Tech educates architects, artists, designers, engineers, and managers who are well prepared for the complex demands dictated by contemporary society.

The curricula of Lawrence Tech's College of Architecture and Design are structured in eight undergraduate programs, a 168-credit Master of Architecture professional degree program, and a Master of Interior Design, Master of Urban Design, and Master of Arts in Environmental Graphic Design.

Students are cautioned that course selection approval at the time of registration is based on stated prerequisite requirements and the student's ability to maintain adequate academic progress in collateral courses as indicated in the respective curriculum outlines.

A master plan of studies may be formulated by the student, in consultation with an advisor, based on the "Guide to Course Offerings," available in the college's administrative office.

For first-hand experience, great emphasis is placed on field trips that may be a part of any course offered by the college.

# Lawrence Technological University

Transfer students are encouraged to enter any of the degree programs in which they have an interest and for which they have the qualifications. When a complete or accurate description of previous course work is lacking, transfer students may be asked to present a portfolio of work, complete specific studio problems, or enroll in certain courses to ensure correct placement within the program.

Lawrence Tech's College of Architecture and Design is a member of the Association of Collegiate Schools of Architecture and the National Institute for Architectural Education. The Master of Architecture professional degree program is accredited by the National Architectural Accrediting Board (NAAB). The Bachelor in Interior Architecture program is accredited by the Foundations for Interior Design Education Research (FIDER) and the National Association of Schools of Art and Design (NASAD). The Bachelor of Fine Arts in Graphic Design and the Bachelor of Fine Arts in Interaction Design are also accredited by NASAD.

The following statements have been prepared by the NAAB for inclusion in the catalogs of all architecture programs:

"In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.

"Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree."

## **DEGREE PROGRAMS**

All studies in the College of Architecture and Design creatively integrate the sciences, humanities, and technologies with the design process. Each year's design studios build on course work previously assimilated, and all studio courses must be completed in strict sequential order. In broad terms, the programs are rooted in the rational subjective mastery of basic knowledge, the development of intuitive skill, and the maximization of the student's social and environmental awareness.

Year one is a foundation and introduction into the world of creativity, design, and representation together with general education courses and specialized communications. Year two is a discovery of the integration of cultural awareness and the creative world through liberal studies and design methods, concepts, and theories. In year three there is an exploration of thought and design philosophy through technological, analytical, and conceptual integrations. Year four involves the integration by the individual student of all previous design issues and an opportunity for topic concentration through elective studios.

### **Bachelor of Arts in Architectural Studies**

Students with a Bachelor of Arts in Architectural Studies possess an understanding of the world of architecture from a variety of perspectives. Architecture is a dynamic field involving the design and production of buildings and spaces that are inspiring, functional, sustainable, and responsive to their

## Lawrence Technological University

physical and social contexts. Lawrence Technological University's Architectural Studies program can competitively position students for a career in architecture, journalism, and a variety of other areas. The program focuses on the interdisciplinary nature of architecture in the complex modern world. Graduates possess an educational foundation that can enable them to pursue a number of career options and opportunities for advanced degrees and also to assume leadership roles within the cultural environment.

### **Bachelor of Fine Arts in Game Art**

The Bachelor of Fine Arts in Game Arts program is intense, studio-oriented, interdisciplinary, and far-reaching. The program consists of 128 credit hours and is designed to develop a body of knowledge, skills, and experience in game art with a focus on game design, game mechanics, art asset creation, and game scripting and programming. The program is taught in tandem with the Bachelor of Science in Computer Science's concentration in Game Software Development.

The Bachelor of Fine Arts in Game Art provides a comprehensive overview of the emerging field of game art that ranges from animation and art asset creation to the latest innovations in electronic multimedia and the time-based media of video and sound. Students gain experience in the fundamental skills, history, and theory of game design. Critical thinking and creativity – important to the development of the person as well as the professional – are stressed throughout the curriculum. Emphasis will be placed on students developing a distinctive point-of-view for their creative activities. Studies in literature, the sciences, philosophy, math, and history all contribute to the vision of the game arts professional.

Theory and practice, Lawrence Tech's underlying teaching philosophy, are essential to an effective and marketable designer. All students are required to complete a 150-hour internship program in which they apply their theoretical knowledge to real-life situations and receive mentoring from practicing professionals.

### **Bachelor of Fine Arts in Graphic Design**

The Bachelor of Fine Arts in Graphic Design program provides a comprehensive overview of the ever-changing field of graphic design which ranges from traditional print media to the latest innovations in electronic multimedia and the time-based media of video and sound. Design is commercial, social, public, and political. Students gain experience in the fundamental skills, history, and theory of graphic design. Critical thinking and creativity – important to the development of the person as well as the professional – are stressed throughout the curriculum. Emphasis will be placed on students developing a distinctive point-of-view for their creative activities. Studies in literature, the sciences, philosophy, math, and history all contribute to the vision of the graphic design professional.

Theory and practice, Lawrence Tech's underlying teaching philosophy, are essential to an effective and marketable designer. All students are required to complete a 150-hour internship program in which they apply their theoretical knowledge to real-life situations and receive mentoring from practicing professionals.

### **Bachelor of Fine Arts in Interaction Design**

The Bachelor of Fine Arts in Interaction Design program is based on a broad foundation in the fine arts and visual communication with the application of a variety of media and techniques to achieve creative solutions to fine arts and design problems. The primary goal of this degree is to enable students to creatively apply the design process in the development of hand drawing, Internet designs, photography, motion graphics, and other emerging technologies to meet the needs of corporate and private enterprises. Elective courses are available within the College of Architecture and Design so students have an

## **Lawrence Technological University**

opportunity to explore other creative disciplines. Elective courses are also available within the University in programs such as business, computer science, or engineering. This four-year program prepares students for entry into the Master of Arts in Environmental Graphic Design program.

### **Bachelor of Interior Architecture**

The Bachelor of Interior Architecture program prepares students for careers in interior architecture and design through placing value and emphasis on technical, social, psychological, cultural, environmental, economical, spiritual, and physical factors to comprehensively respond to human needs. The program is integrated with the undergraduate program in architecture, providing students the opportunity to experience the interrelationships among disciplines as they are exposed to a variety of design theories and philosophies. Critical thinking and creativity are important in the development of the person as well as the professional and are emphasized throughout the curriculum. This four-year program also prepares students for entry into the Master of Interior Architecture program.

### **Bachelor of Science in Architecture**

All Bachelor of Science in Architecture majors are admitted into a professional degree program that takes five years and one summer to complete and results in a Bachelor of Science in Architecture and a Master of Architecture.

The Bachelor of Science in Architecture degree program is designed to provide a broad foundation for the development of social and environmental awareness, problem-solving ability and design creativity. This four-year pre-professional program prepares students for entry into the Master of Architecture professional degree program that is accredited by the National Architectural Accreditation Board (NAAB). It also prepares students to enter the Master of Urban Design program. Students must have a 3.0 minimum GPA at the end of the BS in Architecture to automatically advance into the master's degree programs. Additional requirements must be met for entry into the master's program if the 3.0 minimum GPA is not obtained.

### **Bachelor of Science in Industrial Design**

Industrial design is problem solving that balances the interface between technology and esthetics to meet human needs. Industrial designers create concepts, specifications, and products that are responsible, functional, and sustainable.

Industrial designers develop these concepts, specifications, and products through research, analysis, and the synthesis of data guided by the special requirements of the client or manufacturer. They are trained to prepare clear and concise recommendations through drawings, models, and presentations.

The Bachelor of Science in Industrial Design shares fundamental building blocks with the architecture program and is a sibling of the transportation design program. The Bachelor of Science in Industrial Design program focuses on the innovative integration of professional practice to include business case assessment, entrepreneurship, leadership, product psychology, customer journey experience, marketing, sustainability, packaging, and cultural geography.

### **Bachelor of Science in Transportation Design**

The Bachelor of Science in Transportation Design program aims to prepare students for careers in the fields of transportation and industrial design by combining a rigorous design education with engineering and technology principles. The curriculum is unique in that it simulates a corporate design studio by integrating industry scenarios and seminars given by visiting professionals into the daily classroom

## Lawrence Technological University

experience. In addition to core studios based on transportation products, students have the flexibility to tailor the program to their particular interests in industrial design, including animation, storyboarding, conceptual gaming design, product, apparel, graphics, and color and trim.

### **Direct-Entry Master of Architecture**

Students who enter the architecture program as freshmen can complete the National Architecture Accrediting Board (NAAB) accredited Master of Architecture degree in five years and two summers. Students must have a 3.0 GPA after completing all undergraduate-level courses to advance to the upper-division master's level courses. Students finishing the lower division courses with a GPA below 3.0 can obtain the Bachelor of Science in Architecture, as long as all other degree requirements are met.

Please note: It is the Master of Architecture degree that is accredited by the NAAB.

### **DUAL DEGREES**

Students may earn two degrees – Bachelor of Science in Architecture and Bachelor of Interior Architecture – in as few as five years by carefully preplanning their course work. Qualified dual degree students may also earn a graduate degree, in addition to the dual degrees, in a total of seven years through the careful structuring of course work. Students desiring dual degrees in architecture and interior architecture, architecture and civil engineering, architecture and graphic design, architecture and interaction design, architecture and architectural engineering or architecture and construction management must consult with an advisor in the freshman year for assistance in properly sequencing their course work.

### **MASTER OF ARCHITECTURE (MArch)**

The 36-credit Master of Architecture (MArch) graduate degree program meets the academic credentials for professional licensing in the field of architecture established by the National Architectural Accrediting Board (NAAB). The program emphasizes leadership qualities for future architects who may work in teams in professional practice or pursue non-traditional practice. For detailed information on the graduate programs, see the *Graduate Catalog* ([www.ltu.edu/futurestudents/graduate/graduate\\_catalog.asp?\\_wds=gr](http://www.ltu.edu/futurestudents/graduate/graduate_catalog.asp?_wds=gr)).

### **MASTER OF INTERIOR DESIGN**

The 37-credit Master of Interior Design degree is a post-professional program aimed at individuals who hold an undergraduate degree in interior design. The program combines theory and issues with research and studio projects that allow intensive examination of an area of interest.

### **MASTER OF URBAN DESIGN**

The 34-credit-hour Master of Urban Design (mUD) can be completed in three semesters. The program welcomes students with diverse undergraduate degrees and backgrounds and features a pedagogical and research emphasis that builds upon the University's commitment to its urban and suburban context. The Master of Urban Design is designed to help students develop a body of knowledge, skills, and experience in urban design with a focus on sustainable urbanism – a balanced and holistic systems approach to design and policy initiatives which addresses the complex environmental, economic, and social forces that affect global city and regional forms.

# Lawrence Technological University

## BACHELOR OF ARTS IN ARCHITECTURAL STUDIES

### Global Studies Concentration

TOTAL SEMESTER CREDIT HOURS: 120

#### Freshman Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
ARC 1012	Art & Design Awareness	2
ARC 1213	Visual Communication 1	3
ART 1113	Basic Design 1	3
SSC 2413	Foundations of American Exp.	3
		TOTAL 15

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 1414 <b>or</b>	Calculus 1 <b>or</b>	
MCS 1254	Geometry in Art	4
SSC 2423	Development of American Exp.	3
ARC 1223	Visual Communication 2	3
ART 1133	Basic Design 2	3
		TOTAL 16

#### Sophomore Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
ARC 3613	History/Designed Environ. 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARC 2813 <b>or</b>	Visual Communication 3 <b>or</b>	
ARC XXX3	Elective	3
LLT XXX3	Foreign Language	3
		TOTAL 16

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
ARC 3623	History/Designed Environ. 2	3
ART 2113	Life Drawing	3
SSC 2303	Principles of Economics 1	3
LLT XXX3	Foreign Language	3
LDR 2001	Leadership Models & Practices	1
COM 3000	Writing Proficiency Exam	0
		TOTAL 16

# Lawrence Technological University

## Junior Year

**Note: The Global Studies concentration requires study abroad.** Students may opt for an entire semester abroad or take advantage of the four-week Paris Summer Abroad program. Course selection to be preapproved based on program offerings.

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT XXX <sub>3</sub>	Foreign Language	3
SSC 338 <sub>3</sub>	International Economics	3
ARC/ART XXX <sub>3</sub>	Elective	3
SSC XXX <sub>3</sub>	Elective	3
	TOTAL	12

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 3000	Leadership Seminar Series	0
SSC 373 <sub>3</sub>	Aesthetics	3
ARC XXX <sub>3</sub>	Elective	3
LLT 361 <sub>3</sub>	Literature & Art	3
SSC 372 <sub>3</sub>	Ethics	3
PHY/CHM/BIO/ GLG/FSC XXX <sub>3</sub>	Elective	3
	TOTAL	15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 365 <sub>3</sub>	Non-Western Trad./Art 1	3
LLT/SSC/PSY 3XX <sub>3</sub> /4XX <sub>3</sub>	Junior/Senior Elective	3
ARC 418 <sub>3</sub>	20 <sup>th</sup> Century Architecture	3
ARC 462 <sub>3</sub>	Japanese Architecture	3
ARC XXX <sub>3</sub>	Elective	3
LDR 4000	Leadership Capstone	0
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 366 <sub>3</sub>	Non-Western Trad./Art 2	3
ARC XXX <sub>3</sub>	ARC Elective	3
SSC 325 <sub>3</sub>	Golden Age of Greece	3
SSC 371 <sub>3</sub>	Topics in Philosophy	3
SSC 464 <sub>3</sub>	World Religions	3
	TOTAL	15

### Architectural Studies Advisor

Gretchen Rudy, 248.204.2853, [grudy@ltu.edu](mailto:grudy@ltu.edu), A112



# Lawrence Technological University

## BACHELOR OF ARTS IN ARCHITECTURAL STUDIES

### History/Theory Concentration

TOTAL SEMESTER CREDIT HOURS: 120 (Three-Year Program with Two Summer Semesters)

#### First Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
ARC 1012	Art & Design Awareness	2
ARC 1213	Visual Communication 1	3
ART 1113	Basic Design 1	3
SSC 2413	Foundations of American Exp.	3
		TOTAL 15

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 1414 or MCS 1254	Calculus 1 or Geometry in Art	4
SSC 2423	Development of American Exp.	3
ARC 1223	Visual Communication 2	3
ART 1133	Basic Design 2	3
		TOTAL 16

##### THIRD SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARC 2813 or ARC XXX3	Visual Communication 3 or Elective	3
		TOTAL 10

#### Second Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 3000	Writing Proficiency Exam	0
LLT 1223	World Masterpieces 2	3
ARC 3613	History/Designed Environ. 1	3
SSC/PHY/CHM/BIO/ GLG/FSC XXX3	Elective	3
SSC 2303	Principles of Economics 1	3
LLT XXX3	Foreign Language	3
		TOTAL 15

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 3253	Golden Age of Greece	3
ARC 3623	History/Designed Environ. 2	3
SSC 3713	Topics in Philosophy	3

# Lawrence Technological University

ART 2113	Life Drawing	3
LLT XXX3	Foreign Language	3
LDR 2001	Leadership Models & Practices	1
		TOTAL 16

## THIRD SEMESTER (SUMMER)

**Note: The History/Theory concentration allows for optional study abroad in the Study Abroad Paris summer program.** Students may take preapproved courses comparable to cultural studies, LLT/SSC, foreign language, and/or art/architecture studio electives.

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 3613	Literature & Art	3
ART/ARC XXX3	Elective	3
ART/ARC XXX3	Elective	3
		TOTAL 9

## Third Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 3633	Traditions of Art 1	3
SSC 3733	Aesthetics	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
ARC XXX3	Elective	3
SSC 4643	World Religions	3
LDR 3000	Leadership Seminar Series	0
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 3643	Traditions of Art 2	3
ARC XXX3	Elective	3
SSC 3723	Ethics	3
ARC 4113	Great Books of Architecture	3
ARC 4183	20 <sup>th</sup> Century Architecture	3
LDR 4000	Leadership Capstone	0
		TOTAL 15

### THIRD SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 3653	20 <sup>th</sup> Century Art	3
ARC XXX3	Elective	3
LLT/SSC XXX3	Elective	3
		TOTAL 9

## Architectural Studies Advisor

Gretchen Rudy, 248.204.2853, [grudy@ltu.edu](mailto:grudy@ltu.edu), A112

# Lawrence Technological University

## BACHELOR OF ARTS IN ARCHITECTURAL STUDIES

### Studio Arts Concentration

TOTAL SEMESTER CREDIT HOURS: 120/121

#### Freshman Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
ARC 1012	Art & Design Awareness	2
ARC 1213	Visual Communication 1	3
ART 1113	Basic Design 1	3
SSC 2413	Foundations of American Exp.	3
		TOTAL 15

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 1414 <b>or</b>	Calculus 1 <b>or</b>	
MCS 1254	Geometry in Art	4
SSC 2423	Development of American Exp.	3
ARC 1223	Visual Communication 2	3
ART 1133	Basic Design 2	3
		TOTAL 16

#### Sophomore Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
ARC 3613	History/Designed Environ. 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARC 2813 <b>or</b>	Visual Communication 3 <b>or</b>	
ARC XXX3	Elective	3
LLT XXX3	Foreign Language	3
		TOTAL 16

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
ARC 3623	History/Designed Environ. 2	3
PHY/CHM/BIO/ GLG/FSC XXX3	Elective	3
SSC 2303	Economics	3
LLT XXX3	Foreign Language	3
LDR 2001	Leadership Models & Practices	1
COM 3000	Writing Proficiency Exam	0
		TOTAL 16

# Lawrence Technological University

## Junior Year

**Note: The Studio Arts concentration allows for optional study abroad.** Students may take preapproved courses comparable to cultural studies, LLT/SSC, foreign language, and/or art/architecture studio electives - **OR** -

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 2523 <b>or</b>	Graphic Design 1 <b>or</b>	
ART 2233	Illus. Comp.	3
ART 3023	Photography	3
ARC/ART XXX3	Elective	3
ARC/ART XXX3	Elective	3
	<b>TOTAL</b>	<b>12/13</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 3000	Leadership Seminar Series	0
SSC 3733	Aesthetics	3
ART 3213	Sculpture	3
LLT 3613	Literature & Art	3
SSC 3723	Ethics	3
ART 2113	Life Drawing	3
	<b>TOTAL</b>	<b>15</b>

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 3633	Traditions of Art 1	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
ARC 4183	20 <sup>th</sup> Century Architecture	3
ARC 4113	Great Books of Architecture	3
ARC XXX3	Elective	3
LDR 4000	Leadership Capstone	0
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 3643	Traditions of Art 2	3
ARC XXX3	Elective	3
SSC 3253	Golden Age of Greece	3
SSC 3713	Topics in Philosophy	3
SSC 4643	World Religions	3
	<b>TOTAL</b>	<b>15</b>

### Architectural Studies Advisor

Gretchen Rudy, 248.204.2853, [grudy@ltu.edu](mailto:grudy@ltu.edu), A112

# Lawrence Technological University

## BACHELOR OF FINE ARTS IN GAME ART

TOTAL SEMESTER CREDIT HOURS: 128

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
PSY 1213	Introductory Psychology	3
ART 1113	Basic Design 1	3
ARC 1012	Art & Design Awareness	2
MCS 1643	Intro. to Games & Animation	3
		TOTAL 15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 2813	Electronic Methods for Imaging 3	3
GAM 1123	Game Genre Development	3
SSC 2413	Foundations of Amer. Exp.	3
ART 1133	Basic Design 2	3
MCS 1254	Geometry in Art	4
		TOTAL 16

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
ART 2113	Life Drawing	3
GAM 2123	2D Animation	3
MCS 3563	Game Design	3
GAM 2213	History of Game Design	3
SSC 2423	Development of Amer. Exp.	3
		TOTAL 18

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
COM 2103	Technical & Prof. Communication	3
ART 3633	Traditions of Art 1	3
GAM 2313	Integrated Game Studio 1	3
GAM 2133	3D Animation 1	3
LDR 2001	Leadership Seminar Series	1
		TOTAL 16

### Junior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2193	Scripting for Game Design	3
CRW 2513	Creative Writing	3
ART 2623	Imaging Studio 1	3
ART 3643	Traditions of Art 2	3

# Lawrence Technological University

GAM 3143	3D Animation 2	3
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0
		TOTAL 15

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY/CCH/BIO/FCS XXX3	Elective	3
PHY/CCH/BIO/FCS XXX1	Lab	1
GAM 3313	Integrated Game Studio 2	3
GAM 3413	Game Mechanics	3
ART/GAM XXX3	History Elective	3
ART/ARC/ARI XXX3	Elective	3
		TOTAL 16

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GAM 4514	Game Art: Senior Project 1	4
ART 4512	Senior Seminar 1	2
PHY/CHM/BIO XXX3	Elective	3
ART 3343	New Media	3
MGT 2113 or MKT 3033	Intro. to Business Law or Entrepreneurial Marketing	3
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GAM 4524	Game Art: Senior Project 2	4
ART 4522	Senior Seminar 2	2
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
ART 4922	Internship Studies	2
ART 3323	Portfolio Design	3
LDR 4000	Leadership Capstone	0
		TOTAL 14

## Game Art Advisor

Peter Beaugard, 248.204.2805, [pbeaugard@ltu.edu](mailto:pbeaugard@ltu.edu), A129

## BACHELOR OF FINE ARTS IN GRAPHIC DESIGN

TOTAL SEMESTER CREDIT HOURS: 131

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
SSC 2413	Foundations of Amer. Exp.	3
ART 1113	Basic Design 1	3
ART 2223	Sketching for Illustration	3
ARC 1012	Art & Design Awareness	2

# Lawrence Technological University

TOTAL 15

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 2813	Electronic Methods for Imaging	3
SSC 2423	Development of Amer. Exp.	3
MCS 1254	Geometry in Art	4
ART 1133	Basic Design 2	3
ART 2113	Life Drawing	3

TOTAL 16

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
ART 2413	Typography	3
PHY/CHM/BIO XXX3	Elective	3
PHY/CHM/BIO XXX1	Elective Lab	1
ART 3633	Traditions of Art 1	3
ART 2523	Graphic Design 1	3
LDR 2001	Leadership Seminar Series	1

TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
COM 2103	Technical & Prof. Communication	3
PSY 1213	Introductory Psychology	3
ART 3643	Traditions of Art 2	3
ART 3513	Graphic Design 2	3
ART 2623	Imaging Studio 1	3

TOTAL 18

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 3523	Graphic Design 3	3
ART 3563	History of Graphic Design	3
ART 3213	Sculpture	3
ART XXX3	Elective	3
ART 3023	Photography	3
COM 3000	Writing Proficiency Exam	0

TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 4513	Graphic Design 4	3
ART XXX3	Art History Elective	3
ART 3033	Digital Photography	3
ART 3043	Video Imaging	3
PHY/CHM/BIO/GLG/FSC XXX3	Elective	3
ART 3343	New Media	3
LDR 3000	Leadership Seminar Series	0

# Lawrence Technological University

TOTAL 18

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 4514	Imaging Thesis 1	4
ARC/ART/ARI XXX3	Elective	3
ART 3323	Portfolio Design	3
MGT 2113 <b>or</b>	Intro. to Business Law <b>or</b>	
MKT 3033	Entrepreneurial Marketing	3
ART 4612	Senior Seminar 1	2
ART 4922	Internship Studies	2

TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 4524	Imaging Thesis 2	4
ART/ARC/ARI XXX3	Elective	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
ART 4522	Senior Seminar 2	2
	Open Elective	3
LDR 4000	Leadership Capstone	0

TOTAL 15

## Graphic Design Advisor

Peter Beaugard, 248.204.2805, [pbeaugard@ltu.edu](mailto:pbeaugard@ltu.edu), A129

## BACHELOR OF FINE ARTS IN INTERACTION DESIGN

TOTAL SEMESTER CREDIT HOURS: 131

## Freshman Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
SSC 2413	Foundations of Amer. Exp.	3
ART 1113	Basic Design 1	3
ART 2223	Sketching for Illustration	3
ARC 1012	Art & Design Awareness	2

TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 2813	Electronic Methods for Imaging3	
SSC 2423	Development of Amer. Exp.	3
MCS 1254	Geometry in Art	4
ART 1133	Basic Design 2	3
ART 2113	Life Drawing	3

TOTAL 16



# Lawrence Technological University

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
PHY/CHM/BIO/GLG XXX3	Elective	3
PHY/CHM/BIO/GLG XXX1	Elective Lab	1
ART 3633	Traditions of Art 1	3
ART 2053	Interaction Studio 1	3
ART 2523	Graphic Design 1	3
LDR 2001	Leadership Models & Practices	1
	TOTAL	17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
COM 2103	Technical & Prof. Communication	3
PSY 1213	Introductory Psychology	3
ART 3643	Traditions of Art 2	3
ART 3523	Interaction Studio 2	3
ART 2623	Imaging Studio 1	3
	TOTAL	18

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 4523	Interaction Studio 3	3
ART 3533	History of Interaction Design	3
ARC 3213	Sculpture	3
ART 3343	New Media	3
ART 3023	Photography	3
COM 3000	Writing Proficiency Exam	0
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GAM/IDD XXX3	Game/Indust. Design Elective	3
ART XXX3	Art History Elective	3
ART 3033	Digital Photography	3
ART 3043	Video Imaging	3
PHY/CHM/BIO/GLG XXX3	Elective	3
ART 4343	New Media 2	3
LDR 3000	Leadership Seminar	0
	TOTAL	18

# Lawrence Technological University

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 4614	Imaging Thesis 1	4
ART/ARC/ARI XXX3	Elective	3
ART 3323	Portfolio Design	3
MGT 2113 or MKT 3033	Intro. to Business Law	3
ART 4922	Internship Studies	2
ART 4612	Senior Seminar	2
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ART 4624	Imaging Thesis 2	4
ART/ARC/ARI XXX3	Elective	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
ART 4622	Senior Seminar	2
	Open Elective	3
LDR4000	Leadership Capstone	0
		TOTAL 15

## Interaction Design Advisor

Peter Beaugard, 248.204.2805, [pbeaugard@ltu.edu](mailto:pbeaugard@ltu.edu), A129

## BACHELOR OF INTERIOR ARCHITECTURE

TOTAL SEMESTER CREDIT HOURS: 132

## Freshman Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
SSC 2413	Foundations of Amer. Exp.	3
ARC 1012	Art & Design Awareness	2
ART 1113	Basic Design 1	3
ARC 1213	Visual Communication 1	3
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
SSC 2423	Development of Amer. Exp.	3
MCS 1254	Geometry in Art	4
ART 1133	Basic Design 2	3
ARC 1223	Visual Communication 2	3
		TOTAL 16

# Lawrence Technological University

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
ARC 3613	History/Designed Environ. 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARC 2117	Integrated Design Studio 1	7
ARC 2813	Electronic Methods for Imaging 1	3
		TOTAL 20

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
ARC 3623	History/Designed Environ. 2	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
ARC 2126	Integrated Design Studio 2	6
LDR 2001	Leadership Seminar Series	1
		TOTAL 17

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS/SSC/LLT/PSY/COM XXX3	Elective	3
ARC 2514	Structures 1	4
ARC 2313	Building Systems 1	3
ARI 3113	Furniture & Millwork	3
ARI 3114	Interior Architecture 1	4
COM 3000	Writing Proficiency Exam	0
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 4443	Acoustical, Elect., & Illum. Sys.	3
ARC 2323	Building Systems 2	3
ART 2523	Graphic Design 1	3
ARI 3124	Interior Architecture 2	4
ARI 3123	Interior Materials & Textiles	3
LDR 3000	Leadership Seminar Series	0
		TOTAL 16

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 4234	Allied Design: Interior Arch.	4
ARI 4223	Interior Design Practice	3
ARI 4113	History of Interiors	3
ARI 4143	Advanced Lighting Design	3
ARC/ART/ARI XXX3	Elective	3
		TOTAL 16

# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARI 4922	Internship Studies	2
ARI 4123	Environmental Psychology	3
ARI 4134	Interior Architecture 3	4
ART XXX3	Art History Elective	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
		TOTAL 15

### Interior Architecture Advisor

Karen Swanson, [kswanson@ltu.edu](mailto:kswanson@ltu.edu), 248.204.2874, A158

## BACHELOR OF SCIENCE IN ARCHITECTURE

TOTAL SEMESTER CREDIT HOURS: 132/133

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1214	Intro. to Math Analysis 1*	4
ARC 1012	Art & Design Awareness	2
ART 1113	Basic Design 1	3
ARC 1213	Visual Communication 1	3
		TOTAL 15/16

\*or replace with MCS 1203 (Logic) when MCS 1214 is excused by placement or MCS1224 transfer

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LLT 1213	World Masterpieces 1	3
MCS 1224	Intro. to Math Analysis 2	4
ART 1133	Basic Design 2	3
ARC 1223	Visual Communication 2	3
		TOTAL 16

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
ARC 3613	History/Designed Environ. 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARC 2117	Integrated Design 1	7
ARC 2813	Visual Communication 3	3
		TOTAL 20

# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of American Exp.	3
ARC 3623	History/Designed Environ. 2	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
ARC 2126	Integrated Design 2	6
LDR 2001	Leadership Seminar Series	1
		TOTAL 17

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 3000	Writing Proficiency Exam	0
SSC 2423	Development of American Exp. 3	
ARC 2313	Building Systems 1	3
ARC 2514	Structures 1	4
ARC 3117	Integrated Design 3	7
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 3423	HVAC & Water Systems	3
ARC 2323	Building Systems 2	3
ARC 2321	Bldg. Systems Global Lecture	1
ARC 3523	Structures 2	3
ARC 3126	Integrated Design 4	6
LDR 3000	Leadership Seminar Series	0
		TOTAL 16

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 4XX4	Allied Design Studio	4
ARC 4443	Acoustical, Elec. & Illum. Sys.	3
ARC 4533	Structures 3	3
ARC 4183	20 <sup>th</sup> Century Architecture	3
ARC/ART/ARI XXX2	Elective	2
LDR 4000	Leadership Capstone	0
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 4114	Arch. Design Studio 5	4
ARC 4543	Structures 4	3
ARC/ART/ARI XXX3	Elective	3
ARC/ART/ARI XXX3	Elective	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
		TOTAL 16

## Architecture Advisors

Scott Shall 248.204.2860, [sshall@ltu.edu](mailto:sshall@ltu.edu), A129

# Lawrence Technological University

Jane McBride, 248.204.2819, [jmcbride@ltu.edu](mailto:jmcbride@ltu.edu), A116

## BACHELOR OF SCIENCE IN INDUSTRIAL DESIGN

TOTAL SEMESTER CREDIT HOURS: 127/128

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
ARC 1012	Art & Design Awareness	2
COM 1103	English Composition	3
IDD 1114	Industrial Design Studio 1	4
ART 1113	Basic Design 1	3
MCS 1203 or MCS 1214	Logic or Intro. to Math Analysis 1	3/4
		TOTAL 16/17

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 1224	Intro. to Math Analysis 2	4
LLT 1213	World Masterpieces 1	3
IDD 1124	Industrial Design Studio 2	4
ART 1133	Basic Design 2	3
		TOTAL 17

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
IDD 2215	Visual Virtualization 1	5
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
IDD 2214	Industrial Design Studio 3	4
LDR 2001	Leadership Seminar Series	1
		TOTAL 17

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
PHY 2223	College Physics 2	3
PHY 2131	College Physics 2 Lab	1
IDD 2225	Visual Virtualization 2	5
IDD 2224	Industrial Design Studio 4	4
		TOTAL 16

### Junior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
IDD 3316	Industrial Design Studio 5	6
ATD 3616	Integrated Con. Design A	6
COM 3000	Writing Proficiency Exam	0

# Lawrence Technological University

TOTAL 15

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ATD 4524	Manufacturing Process	4
IDD 3326	Industrial Design Studio 6	6
ATD 3626	Integrated Con. Design B	6
ATD 2832	Practicum	2
LDR 3000	Leadership Seminar Series	0

TOTAL 18

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ATD 4513	Professional Practice	3
ATD 4414	Rapid Technology	4
ATD 4516	Trans. Design Studio 7T	6
LDR 4000	Leadership Capstone	0

TOTAL 13

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ATD 3723	Transportation History	3
ATD 4526	Trans. Design Studio 8	6
ARC/ART/ARI/ATD XXX3	Elective	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3

TOTAL 15

## Industrial Design Advisor

Andy Hanzel, [ahanzel@ltu.edu](mailto:ahanzel@ltu.edu), 248.204.2866, A154

## BACHELOR OF SCIENCE IN TRANSPORTATION DESIGN

TOTAL SEMESTER CREDIT HOURS: 127/128

## Freshman Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
ARC 1012	Art & Design Awareness	2
COM 1103	English Composition	3
ATD 1914	Trans. Design Studio 1C	4
ART 1113	Basic Design 1	3
MCS 1203 or	Logic or	
MCS 1214	Intro. to Math Analysis 1	3/4

TOTAL 16/17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 1224	Intro. to Math Analysis 2	4
LLT 1213	World Masterpieces 1	3
ATD 1924	Trans. Design Studio 2C	4
ART 1133	Basic Design 2	3

# Lawrence Technological University

TOTAL 17

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
ATD 2813	Digital Tech. Surface 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ATD 2816	Trans. Design Studio 3E	6
LDR 2001	Leadership Seminar Series	1

TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
ATD 2823	Digital Tech. Surface 2	3
ATD 2826	Trans. Design Studio 4E	6

TOTAL 16

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
ATD 3716	Trans. Design Studio 5I	6
ATD 3616	Integrated Con. Design A	6
COM 3000	Writing Proficiency Exam	0

TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ATD 4524	Manufacturing Process	4
ATD 3726	Trans. Design Studio 6I	6
ATD 3626	Integrated Con. Design B	6
ATD 2832	Practicum	2
LDR 3000	Leadership Seminar Series	0

TOTAL 18

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ATD 4513	Professional Practice	3
ATD 4414	Rapid Technology	4
ATD 4516	Trans. Design Studio 7T	6
LDR 4000	Leadership Capstone	0

TOTAL 13



# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ATD 3723	Transportation History	3
ATD 4526	Trans. Design Studio 8T	6
ARC/ART/ARI/ATD XXX3	Elective	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
		TOTAL 15

## Transportation Design Advisor

Keith Nagara, [knagara@ltu.edu](mailto:knagara@ltu.edu), 248.204.2813, A150

## DIRECT-ENTRY MASTER OF ARCHITECTURE

TOTAL SEMESTER CREDIT HOURS: 168

### First Year (Freshman)

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1214	Intro. to Math Analysis 1*	4
ARC 1012	Art & Design Awareness	2
ART 1113	Basic Design 1	3
ARC 1213	Visual Communication 1	3
		TOTAL 15/16

\*or replace with MCS 1203 (Logic) when MCS 1214 is excused by placement or MCS1224 transfer

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LLT 1213	World Masterpieces 1	3
MCS 1224	Intro. to Math Analysis 2	4
ART 1133	Basic Design 2	3
ARC 1223	Visual Communication 2	3
		TOTAL 16

### Second Year (Sophomore)

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
ARC 3613	History/Designed Environ. 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
ARC 2117	Integrated Design 1	7
ARC 2813	Visual Communication 3	3
		TOTAL 20

# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations /Amer. Exp.	3
ARC 3623	History/Designed Environ. 2	3
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
ARC 2126	Integrated Design 2	6
LDR 2001	Leadership Seminar Series	1
		TOTAL 17

## Third Year (Junior)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
ARC 2313	Building Systems 1	3
ARC 2514	Structures 1	4
ARC 3117	Integrated Design 3	7
COM 3000	Writing Exam	0
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 3423	HVAC & Water Systems	3
ARC 2323	Building Systems 2	3
ARC 3523	Structures 2	3
ARC 3126	Integrated Design 4	6
ARC 2321	Bldg. Systems Global Lecture	1
LDR 3000	Leadership Seminar Series	0
		TOTAL 16

## Fourth Year (Senior)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 4XX4	Allied Design	4
ARC 4443	Acoustical, Elec., & Illum. Syst.	3
ARC 4533	Structures 3	3
ARC 4183	20th Century Architecture	3
ARC/ART/ARI XXX2	Elective	2
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 4114	Arch. Design 5	4
ARC 4543	Structures 4	3
ARC/ART/ARI XXX3	Elective	3
ARC/ART/ARI XXX3	Elective	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
		TOTAL 16

# Lawrence Technological University

## Fifth Year (Graduate)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 5804	Critical Practice Studio	4
ARC 5423	Ecological Issues	3
ARC 5013	Research Methods	3
ARC 5643	Design Theory	3
ARC 5814	Adv. Design Studio 1 (or Thesis 1)	4
ARC 5824	Adv. Design Studio 2 (or Thesis 2)	4
		TOTAL 21

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ARC 5913	Professional Practice	3
ARC 6833	Practice Portfolio	3
ARC 5XX2 or 6XX2	Elective	2
ARC 5XX2 or 6XX2	Elective	2
ARC 5XX2 or 6XX2	Elective	2
Non-ARC 5XX3 or 6XX3 Non-ARC Elective		3
		TOTAL 15

**Note:** Students pursuing a dual degree (such as architecture and interior architecture) must consult an advisor to schedule course work. To be official dual degree candidates, students must file a Dual Degree Declaration form with Enrollment Services/Office of the Registrar ([www.ltu.edu/registrars\\_office/forms\\_to\\_print.index.asp](http://www.ltu.edu/registrars_office/forms_to_print.index.asp)).

### Architecture Advisors

Scott Shall 248.204.2860, [sshall@ltu.edu](mailto:sshall@ltu.edu), A129D

Jane McBride, 248.204.2819, [jmcbride@ltu.edu](mailto:jmcbride@ltu.edu), A116

## **College of Arts and Sciences**

**Dean**

Hsiao-Ping H. Moore  
S101, 248.204.3500

**Associate Dean**

Glen A. Bauer  
S101, 248.204.3500

**ABOUT THE COLLEGE OF ARTS AND SCIENCES**

The goal of Lawrence Tech’s College of Arts and Sciences is to develop in all students the ability to think critically, to solve problems creatively, and to make imaginative and rational decisions. The college prepares students for success at the University and for active, responsible, and creative lives. It cultivates the desire to excel in professional and personal endeavors and the ability to understand and work with people of various cultures.

In Arts and Sciences, teaching excellence comes first. Through its Core Curriculum, students share a common experience encompassing the wide varieties of human thought. Instructors employ new learning technologies to teach the best in classical and contemporary thought and practice. The college is guided in all of its endeavors by its motto: “A Classic Education for a Technological World.”

The college is committed to the enhancement of learning for people of all backgrounds and ages. It works for expanded educational and career opportunities for women and minorities. It offers programs for elementary and secondary school children and their teachers. It offers a range of programs that serve the professional community.

In all of its activities, the college is driven by its commitment to the primary value of free, informed choice as the basis for responsible action. Complementing this goal, the College of Arts and Sciences strives to foster civility in social relations – a civility that grows out of respect for the worth of all individuals.

**CORE CURRICULUM**

The College of Arts and Sciences seeks to prepare students to grow intellectually and carry out fully their responsibility to those around them, whether in their families or in their public and professional lives.

The Core Curriculum provides a well-rounded educational experience for all Lawrence Tech students. Students encounter the greatest literary and philosophical works that humankind has produced, and they discuss them with professors in small classes. They explore the sciences in hands-on laboratory environments and gain a solid foundation in mathematics. Composition and communications courses develop a high level of accomplishment in speaking and writing.

**QUEST: OPENED MINDS OPEN DOORS**

Quest is an innovative experiential learning program open to College of Arts and Sciences majors that allows students to pursue a project over and above the requirements of a course with mentoring from a faculty, staff, or alumni “guide.” Students can complete one project per year over a three-year period. Participation in Quest can begin as early as the freshman year with students having one year to complete a

# Lawrence Technological University

project. Quest offers students the opportunity to test and try different career paths and/or explore their interests beyond their majors.

## Projects

The students' projects must meet these three criteria:

1. They enhance the experience of learning at Lawrence Tech through performance, presentation, display, publication, demonstration, or instruction.
2. They have both theoretical and practical components and display original problem-solving skills.
3. They require submission of a portfolio that documents the rationale, development, and outcomes of the project as well as the impact of the project on the students' career goals.

## Categories

Students may choose projects organized within three categories:

**Arts** – Projects that stretch students beyond their majors, relate their majors to the creative arts, or relate the arts to a career path.

- Participation in *Prism*, the Society of Dramatic Arts, Musician's Society, Artist's Guild
- Video/multimedia development, dance, photography, fine arts, game development
- Emphasis on interdisciplinarity and the theory and practice of creativity
- Projects that combine math, computer science, and art or the natural sciences and art

**Leadership** – Projects that explore a career path, are team-oriented, bridge international and traditional student populations, promote Lawrence Tech community building, foster mentoring among students, provide solutions to issues of local and/or national concern, or stimulate peace and prosperity locally and globally. Students' Junior Year Leadership Project may count toward Quest credit if the project fulfills the Quest criteria.

- Professional development
- Entrepreneurialism
- Service
- Global awareness

**Research** – Projects that explore career paths in research or graduate education.

- Assisting faculty in original research and/or conducting original research in the natural sciences, math and computer science, humanities, or the social sciences
- Presentation at undergraduate conferences, publication encouraged.

## Narrative Transcript

Upon satisfactory completion of the project(s) and submission of a detailed portfolio, students receive, along with a traditional GPA transcript, a narrative transcript describing their Quest projects. Students also receive special recognition at graduation.

## Funding

Funding for projects and summer stipends are available through competitive grants from the Quest program. For more information on the Quest program visit [www.ltu.edu/arts\\_sciences/quest.asp](http://www.ltu.edu/arts_sciences/quest.asp) or contact Jeff Morrissette, 248.204.3619, [jmorrissette@ltu.edu](mailto:jmorrissette@ltu.edu)

## DEGREE PROGRAMS

## Lawrence Technological University

The college provides undergraduate degree programs in business administration (see below, in College of Arts and Sciences, Undergraduate Management Programs) chemical biology, chemical technology, chemistry, computer science, English and communication arts, environmental chemistry, general studies, humanities, information technology (see below, in College of Arts and Sciences, Undergraduate Management Programs), mathematics, mathematics and computer science, media communication, molecular and cell biology, physics, physics and computer science, psychology, and radio and television broadcasting. Pre-medical and pre-dental programs are arranged through the Department of Natural Sciences and pre-law through the Department of Humanities, Social Sciences, and Communication. The undeclared program provides special services and support for students not yet ready to enter specific majors. In addition, the college offers minors and dual majors (see descriptions included in individual program curriculum guides).

The college continually develops courses and programs in response to social, economic, and technological changes. With a strong undergraduate education, Arts and Sciences graduates can prepare for immediate entry to professional life and for graduate or professional school.

### **Associate of Arts in Radio and Television Broadcasting**

A partnership between Lawrence Tech and the Specs Howard School of Media Arts makes it possible for students to earn their Associate of Arts in Radio and Television Broadcasting by combining the extensive practical knowledge gained at Specs Howard with courses from Lawrence Tech's core liberal arts curriculum and the University's Media Communication program. The goal of the Associate of Arts in Radio and Television Broadcasting program is to help students develop the skills needed for a successful career, including:

- highly developed written and oral communication skills;
- a thorough understanding of rhetorical and ethical considerations that play a key role in broadcasting and news presentations; and
- courses in literature, history, philosophy, mathematics, science, and the arts, providing a comprehensive, interactive engagement with the ideas and texts that have shaped human civilization.

### **Associate of Science in Chemical Technology**

Students in the Associate of Science in Chemical Technology program have available to them the same facilities and experiences as students in the four-year chemistry program. This degree is designed to be completed in only two years and will qualify students to work as skilled technicians alongside professional chemists and chemical engineers.

### **Associate of Science in General Studies**

The Associate of Science in General Studies is designed for students seeking a high-quality two-year liberal arts degree or a stepping stone into a four-year program. This program also serves as an ideal dual major component for students needing to establish financial aid eligibility for the Michigan Tuition Incentive Program.

Students in general studies benefit from Lawrence Tech's outstanding faculty, small class sizes, the structured Core Curriculum, state-of-the-art technology, and impressive laboratory facilities. In addition, students receive personal guidance from academic advisors genuinely interested in their needs and educational goals.

# Lawrence Technological University

The general studies program at Lawrence Tech offers:

- carefully designed courses that help the student develop proficiency in key subject areas, such as mathematics, science, and communication;
- core courses, common to all Lawrence Tech degree programs, in which students develop the ability to think both critically and creatively;
- diverse opportunities to complete selected courses in areas such as engineering, computer science, architecture and design, science, business, and others in preparation for pursuing a four-year degree;
- comprehensive tutoring and support services from the Academic Achievement Center;
- student access to Lawrence Tech's state-of-the-art computer and laboratory facilities.

## **Bachelor of Arts in English and Communication Arts**

The Bachelor of Arts in English and Communication Arts embraces Lawrence Tech's philosophy of theory and practice by combining the study of literature with creative writing and experience in technical and professional communication. The English and Communication Arts program prepares students for professional careers in written, oral, and computer-based communication. The degree also provides excellent preparation for law school and graduate programs in the humanities. Students:

- learn from outstanding faculty, experts, and practitioners in their field;
- participate in small classes that enhance team-building and problem-solving skills;
- develop their creativity through projects using state-of-the-art technology; and
- gain experience as interns in business, industry, and publishing-related fields.

## **Certificate in Technical and Professional Communication**

A Certificate in Technical and Professional Communication, consisting of 15 semester hours of study, is available to Lawrence Tech degree candidates or to students enrolling specifically for the certificate. Students interested in proceeding beyond the certificate level can complete additional course work to earn a minor in technical and professional communication. Requirements for the minor include the courses required for the certificate, plus one additional communication course at the 2000 level or higher.

## **Bachelor of Science in Chemical Biology**

Molecules large and small play a crucial role in the functioning of larger organisms. Recent advances in the life sciences and in biotechnology have created industries with a deep need for scientists and technicians who are well versed in both biology and chemistry. This dual knowledge – chemical biology – constitutes an emerging discipline that lies at the very core of the biotechnology industry. Lawrence Tech's Bachelor of Science in Chemical Biology was the first such program in the Midwest. Graduates of this unique interdisciplinary program are positioned to pursue careers in the pharmaceutical and biotechnology industries as well as graduate work in chemistry, biochemistry, molecular biology, and chemical biology. This curriculum also satisfies the requirements for admission to medical, dental, or veterinary schools.

## **Bachelor of Science in Chemistry**

### **Bachelor of Science in Environmental Chemistry**

Lawrence Tech's programs in chemistry and environmental chemistry place a strong emphasis on laboratory experience. There are several options within the chemistry program at Lawrence Tech.

## Lawrence Technological University

Students who choose the standard degree option certified by the American Chemical Society are broadly prepared to find employment in chemistry laboratories, and in the fields of research, industry, medicine, biochemistry, government, and education. Students are also well positioned for subsequent graduate work in chemistry, biochemistry, or materials science.

Students who select the Engineering Chemistry concentration receive preparation in both chemistry and engineering and may pursue positions in traditional chemistry fields as well as many of those normally filled by chemical engineers. It is an attractive option for students who wish to pursue dual majors in chemistry and in engineering.

The bachelor's program in environmental chemistry offers preparation for careers in green chemistry; hazardous waste management; chemical health and safety; environmental analysis, inspection and compliance; and the synthesis of biodegradable and photodegradable materials. It also allows students to enter graduate programs in environmental engineering and hazardous waste management.

In all of these programs, students can:

- design a program to meet their career objectives;
- qualify to become skilled chemical laboratory professionals immediately following graduation;
- work with equipment and instrumentation offering preparation for real-world employment;
- acquire the computer and communication skills needed for success in chemistry and the life sciences;
- participate in small classes that foster interaction with teachers and fellow students; and
- be welcomed to an award-winning American Chemical Society student chapter.

### **Bachelor of Science in Computer Science**

Computer science is associated with the development and analysis of computer software, algorithms, and technologies. Most information-age technologies are the end result of years of work by computer scientists. The Bachelor of Science in Computer Science at Lawrence Tech offers students a sound foundation in computer science, complemented by a broad core of courses in the sciences and liberal arts. A background in mathematics enables students to contribute to scientific applications or continue with graduate work in computer science.

Software development is a major emphasis of the program, and depending on their personal goals, students may choose one of four concentrations: Business Software Development, Game Software Development, Network Software Development, or Scientific Software Development.

Computer science majors can focus on intelligent systems, autonomous robots, game development, computer security, Web application development, data mining, networks, and virtual environments – just to name a few subject areas. Career opportunities occur in a wide variety of settings, such as large or small software companies, computer service companies, and in various other fields, including industry, government, banking, and health care.

### **Certificate in Computer Science**

A Certificate in Computer Science, consisting of 30 credit hours, is available. Students must earn a 2.0 GPA in all courses to earn the certificate.

### **Bachelor of Science in Humanities**



## Lawrence Technological University

The humanities attempt to make sense of our human experience. They explore, for example, what makes a society just, or why a free society is best. They tell us about our history, and about our imagination, as expressed in painting, film, or literature. They explore how we can best communicate and how to think about the social and philosophical implications of other disciplines such as science and technology.

The Bachelor of Science in Humanities emphasizes a solid liberal arts education while encouraging creativity:

- It provides a solid foundation in the different areas of the humanities and allied social sciences. Humanities students take challenging courses in philosophy, literature, history, communication, psychology, and economics.
- Most of our humanities courses follow the Great Books method, which requires that the students read classic texts and come to discuss them in small classes under the guidance of a highly qualified professor. In contrast to lectures, this method sharpens the students' reading, writing, and critical thinking skills.
- Apart from the more traditional areas, the Department of Humanities, Social Sciences, and Communication also offers a great variety of courses in such fields as creative writing and media communication (including radio, television, and film), as well as the opportunity to work in internships and to do individual or small-group research under the supervision of a faculty member (e.g., the Quest Program).
- In keeping with the theme of intellectual exploration, the Bachelor of Science in Humanities offers a large number of open electives. This feature makes it easy for humanities majors to become double majors. It also makes the major quite suitable for pre-law and pre-med students, as well as for those who plan to enroll in an MBA program or devote themselves to public service.
- All in all, however, the main appeal of the Bachelor of Science in Humanities program is the opportunity students have to develop their creative intellect in an area of their own choosing. Under the tutelage of their thesis advisor, students design a series of no less than four related courses that gives them the background to write a senior thesis or carry out a senior project. A student may, for example, take courses in oral storytelling, creative writing, and playwriting, and cap this training with a play as a senior project. Perhaps the project would include a production of the play by Lawrence Tech's Society of Dramatic Arts. Or the student may take classes in art, aesthetics, and neuropsychology, culminating in a senior thesis on the neuropsychology of art. The possibilities to mature as a creative thinker are endless.

The humanities curriculum will help develop students' ability to solve problems creatively and to make imaginative and rational decisions – giving them an edge to succeed in the workplace as well as prosper in the competitive global economy of the 21st century.

### **Bachelor of Science in Mathematics**

The influence of mathematical ideas is increasing in a large number of disciplines. Recent advances in physics, chemistry, and astronomy rely heavily on mathematical ideas, and the biological sciences often use mathematical models. Mathematics is used with increasing frequency in the social sciences, particularly in economics and psychology. The Lawrence Tech Bachelor of Science in Mathematics focuses on helping students master both mathematical theories and their practical applications, offering them a competitive edge in any career.

In addition to finding employment in the fields already mentioned, mathematics majors are sought after by almost every bureau and branch of the federal government. A degree in mathematics also provides

## **Lawrence Technological University**

excellent preparation for graduate study in such areas as accounting, economics, or computer science as well as mathematics.

### **Bachelor of Science in Mathematics and Computer Science**

Mathematics and computer science are closely related fields. Problems in computer science are often formalized and solved with mathematical methods; in fact, the computer industry employs more mathematicians than any other single field. As society becomes increasingly dependent on computers and other means of information processing, the need for people trained in mathematics and computer science is expected to grow exponentially. Because computer technology is embedded in so many products, services, and systems, jobs requiring math and computer science can be found in virtually every industry.

The Bachelor of Science in Mathematics and Computer Science at Lawrence Tech is a broad and intensive program that enables students to pursue a wide variety of career paths and offers them the opportunity to develop a deeper understanding of the foundations of mathematics and the relation of mathematical tenets to problem solving in the arena of computer science. Compared with a degree in mathematics or computer science alone, it provides the most rigorous preparation for higher-level problem solving and for graduate school.

As undergraduates, students participate in research projects and have opportunities to engage in team-oriented activities, including state and national competitions, designed to prepare them to take part in, and lead, project teams on the job. Students will gain experience using advanced mathematical and computing tools to solve real-world problems and will receive the background necessary for graduate work in either computer science or applied mathematics.

Within the computer industry, individuals with mathematical and computer science expertise are employed by Internet service providers, Web search portals, and data processing, hosting, and related services firms. Others work for government, manufacturers of computer and electronic products, insurance companies, financial institutions, and universities and in the areas of artificial intelligence, biomedical information systems, computer design and engineering, computer networking, gaming systems, information technology, search engines, systems and software engineering, and computerized package distribution systems.

### **Bachelor of Science in Media Communication**

Lawrence Tech's Bachelor of Science in Media Communication program aims to prepare students for careers in the news and entertainment fields. Courses cover topics including cinematography, screenwriting, broadcast television production, film and video editing, online publications, Web design, and social media. The curriculum gives students the opportunity to develop analytical and communications skills and a hands-on understanding of media technology. The cornerstone of this distinctive program is a strong emphasis on civic and social responsibility as well as ethics. Internships provide real-world experience in film/video production, broadcast and/or corporate environments and opportunities to expand the students' base of expertise.

The Bachelor of Science in Media Communication provides a concentration in Film, Television and Video Production. The concentration's hands-on approach encompasses not only essential technical training but also one-on-one mentoring. The highly specialized curriculum continually evolves to reflect the ever-changing demands of the broadcast industry.

The Film, Television, and Video Production concentration aims to prepare students to:

- enter their field with a superior theoretical, technical, creative, and ethical foundation that distinguishes them from other media specialists;
- think critically based on an impressive background in communication and writing that will serve them not only in their careers, but in their lives;
- become leading-edge producers, writers, reporters, editors, technicians, or related communication professionals who can work independently or in teams; and
- showcase their creative and technical ability in an electronic resume that represents the best of their original productions.

The Media Communication program at Lawrence Tech also offers a concentration in Architectural Studies. This concentration provides an understanding of the history, theories and practices of architecture and the built environment. Students gain the skills necessary to be expert communicators and commentators on the issues of architecture, the built environment, ecology, sustainability, and urbanity. With this concentration, students can leverage their interest in architecture, cities, and the general built environment with marketable media skills.

### **Certificate in Television and Video Production**

The Television and Video Production certificate is a unique 15-credit-hour sampling of camera technique, editing, writing, and communication, which takes advantage of the latest technology.

### **Bachelor of Science in Molecular and Cell Biology**

The first undergraduate degree of its kind in southeastern Michigan, Lawrence Tech's Bachelor of Science in Molecular and Cell Biology is a comprehensive degree with an emphasis on the role of individual cells and molecules in influencing the biology of organisms, populations, and communities. Its focus is on the interaction of cells and molecules that gives the cells their functionality and ultimately the properties of life. An integrative program encompassing the breadth of biological disciplines, the Molecular and Cell Biology curriculum prepares students for any of the multiple paths they may follow in the life sciences, including especially medical school and graduate research.

### **Bachelor of Science in Physics**

#### **Bachelor of Science in Physics and Computer Science**

The physics degree programs at Lawrence Tech place a strong emphasis on laboratory experience and the use of computers to prepare students for scientific study, research and development, and medical, dental, and law school entrance. The programs also provide useful skills in preparation for immediate career opportunities. The Bachelor of Science in Physics has several electives that enable students to design their degrees to match their career goals and interests, including lasers and holography, nuclear physics, biomedical engineering, geophysics, health physics and nuclear medicine, science education, patent law, and astronomy.

The Bachelor of Science in Physics is designed for those who wish to work in research and development in industry and in interdisciplinary research. This degree can readily be pursued as a dual major with one of

## Lawrence Technological University

the engineering disciplines. Three concentrations are offered: Biophysics, Applied Physics, and Chemical Physics.

The Bachelor of Science in Physics and Computer Science prepares students to apply computers and sensor technology to the solving of practical problems.

In each of these physics programs, students can:

- gain computer skills that allow analysis of data gathered with interfaced sensors;
- design a program to meet career objectives;
- engage in a field leading to the exciting research that drives the technological revolution, from radio astronomy to lasers, medical imaging, and supercomputers;
- join the many Lawrence Tech physics students who have gone on to the nation's top graduate programs in physics or related fields;
- participate in small classes where they interact closely with teachers and students;
- find opportunities to participate as an undergraduate in special programs at national facilities, such as Oak Ridge, Argonne, Fermilab, and Los Alamos; and
- acquire the communication skills necessary for a successful career.

### **Bachelor of Science in Psychology**

Few things are as fascinating as human behavior. At Lawrence Tech, an interest in psychology can be transformed into a rewarding and fulfilling career. The occupational outlook for psychologists is bright, with a variety of career tracks available at all degree levels.

Lawrence Tech's major in psychology prepares students for immediate entry into a variety of careers based on understanding human motivation and interaction. The degree also can provide a solid foundation for advanced and professional degrees. Psychology is among the fastest growing professional areas, and Lawrence Tech offers students three pathways into this exciting field: Clinical Psychology, Industrial/Organizational Psychology, or Pre-med/Biobehavioral Psychology.

Students working toward a bachelor's degree in psychology at Lawrence Tech begin with a core of foundational course work and finish with interdisciplinary course work and electives in their chosen concentration. Each concentration requires students to participate in basic and applied behavioral research, including cutting-edge laboratory experience, and offers hands-on experience in the workplace through internships.

***Clinical Psychology*** – This concentration offers students a broad-based understanding of individual and group behavior. After building a foundation in human development, social psychology, and abnormal psychology, students move to more specialized courses. They explore, for example, learning and memory, the relationship between drugs and behavior, and how people function in organizations. Students study the pioneers in the field, such as Freud and Pavlov, as well as the most recent breakthroughs in neuropsychology and cognitive behavioral therapy.

Graduates with this concentration most often work in health-related fields and frequently work in schools with children and adolescents. The Clinical Psychology concentration is also solid preparation for work toward advanced degrees. Those who go on to pursue a master's degree elsewhere may become eligible for the Limited License in Psychology. This helps graduates enter the fields of psychological testing and applied social psychology as well as in human services dealing with chemical dependency, public health,

## Lawrence Technological University

family counseling, labor relations, and social work. With a doctorate in clinical psychology, students can obtain full licensure to provide assessment and treatment working in academic settings, hospitals, community health centers, or private practice.

***Industrial/Organizational Psychology*** – By choosing this option, students can work in industry and business immediately after graduation. Students explore leadership, decision-making, motivation, organizational behavior management, cultural diversity in the workplace, job performance, and recruiting, testing, and training in both psychology and business administration courses.

The Industrial/Organizational Psychology program can be especially useful for students who wish to prepare for advanced degrees, such as the MBA, or to combine graduate study in psychology with other business training.

***Pre-Med/Biobehavioral Psychology*** – The focus of this concentration is to prepare students for medical school or for a career in the exciting field of biotechnology. Lawrence Tech's psychology program seeks to provide not only a solid foundation in science, mathematics, computers, and the humanities but also an integrated academic and technical background in psychopharmacology and the behavioral sciences that can enhance a student's eligibility for employment in the pharmaceutical, biotechnology, or health-related industries.

This option fulfills the requirements for Lawrence Tech's pre-medical program. Psychology is, in fact, one of the three most popular undergraduate majors, along with biology and chemistry, for students applying to medical school. A psychology degree can give students a distinct advantage, preparing them for the pre-professional entrance exams and allowing them to specialize later in neuroscience, psychiatry, and a variety of medical specialties.

### **Certificate in Industrial/Organizational Psychology**

There is a strong demand in the field for individuals who are able to combine the study of psychology with technical expertise in another discipline. The focus of this certificate is on the application of psychological principles to the problems facing people within the context of business and industry.

This 16-credit-hour certificate can be earned along with any of Lawrence Tech's undergraduate degrees or as a stand-alone program.

### **Undeclared**

The College of Arts and Sciences welcomes students interested in exploring their educational options prior to declaring a major. While completing general education courses common to all degree programs, undeclared students may also select from introductory courses in architecture, business, communication, computers, engineering, mathematics, science, or any other discipline offered at the University as a way to learn more about these areas of study. A network of academic advisors and career services professionals is available to assist students in selecting the major best suited to their interests and abilities. As course work is completed and GPA standards are attained, students may apply for admission to their desired baccalaureate programs at the University.

### **NATURAL SCIENCES REQUIREMENT**

Some majors at Lawrence Tech specify Natural Sciences 1, Natural Sciences 2, and Natural Sciences Lab as required courses. To satisfy the natural sciences lecture course requirement for these majors, *any two* of the courses listed below may be taken. All prerequisites and co-requisites must be satisfied. Well-prepared

## Lawrence Technological University

students may substitute higher-level science courses for those listed below. Students who have specified Undeclared as their major should consult with an advisor to determine which courses best fit their academic and career plans.

<i>Course Number</i>	<i>Subject</i>	<i>Prerequisite or Co-requisite</i>
BIO 1153	Intro. to Biological Principles	None
BIO 1213**	Biology 1**	BIO 1153 or placement
BIO 1223**	Biology 2**	BIO 1153 or placement
BIO 2313	Microbiology	BIO 1213
CHM 1154	Intro. to Chemical Principles	MCS 0054* or higher
CHM 1213	University Chemistry 1	MCS 0083 or higher
CHM 1223	University Chemistry 2	CHM 1213
CHM 2313	Organic Chemistry 1	CHM 1213 + CHM 1221
FSC 1214***	Forensic Science	None
GLG 1103	Geology	None
PSC1143	Environ. Science & Sustainability	None
PHY 1154***	Intro. to Physical Principles***	MCS 0074, MCS 0093, MCS 1214, MCS 1254 or higher
PHY 1213	Introductory Astronomy	MCS 0054* or higher
PHY 2213	College Physics 1	MCS 0074, MCS 0093, MCS 1214, MCS 1254 or higher
PHY 2223	College Physics 2	PHY 2213
PHY 2413	University Physics 1	MCS 1424*
PHY 2423	University Physics 2	PHY 2413 and MCS 2414*

\*Co-requisite courses

\*\*BIO 1213 and BIO 1223 are independent. Neither is prerequisite to the other.

\*\*\*FSC 1214 and PHY 1154 have integrated laboratory components that satisfy the requirement for a laboratory course as well as that for a natural sciences lecture course.

To satisfy the natural science laboratory requirement, *any one* of the courses listed below may be taken. All prerequisites and co-requisites must be satisfied.

<i>Course Number</i>	<i>Subject</i>	<i>Co-requisite Lecture</i>
BIO 1221	Biology 1 Laboratory	BIO 1213 or BIO 1153
BIO 1231	Biology 2 Laboratory	BIO 1223
CHM 1221	University Chemistry 1 Laboratory	CHM 1213
FSC 1214***	Forensic Science	None
PHY 1154***	Introduction to Physical Principles	None
PHY 1221	Astronomy Laboratory	PHY 1213
PHY 2221	College Physics 1 Laboratory	PHY 2213
PHY 2231	College Physics 2 Laboratory	PHY 2223
PHY 2421	University Physics 1 Laboratory	PHY 2413
PHY 2431	University Physics 2 Laboratory	PHY 2423

# Lawrence Technological University

\*\*\*FSC 1214 and PHY 1154 have integrated laboratory components that satisfy the requirement for a laboratory course as well as that for a natural sciences lecture course.

## CALCULUS SEQUENCE PLACEMENT

The results of a student's placement assessment in mathematics will determine which course the student will take. The following chart is only a guideline for judging where students might expect to be placed.

High School background	Expected first semester	Expected second semester
2 units Algebra 1 unit Geometry 0.5 unit Trig.	MCS 1414 Calculus 1	MCS 1424 Calculus 2
2 units Algebra 1 unit Geometry	MCS 0093 Trigonometry	MCS 1414 Calculus 1
1.5 units Algebra 1 unit Geometry	MCS 0074 Precalculus	MCS 1414 Calculus 1
1 unit Algebra	MCS 0051 Alg. Concepts <b>plus</b> MCS1113 Tech. Math	MCS 0074 Precalculus
1 unit Geometry 1 unit Algebra	MCS 0051 Alg Concepts <b>plus</b> MCS1113 Tech Math	MCS 0083 Coll. Alg.

## ENGLISH AS A SECOND LANGUAGE (ESL)

The purpose of the ESL program is to help students acquire the English language skills necessary to do well at Lawrence Tech. The program normally consists of a semester of 18 hours per week of intensive training in conversation, reading, writing, and grammar. A portion of those hours (six or less) may be taken in the actual academic program for which the student has been conditionally accepted, with appropriate ESL supervision. Permission to pursue this option must be given by the pertinent program in consultation with the ESL program. If at the end of the 18 hours students have not yet achieved the appropriate level of English, they may pursue additional ESL training at the University (a six-hour-per-week additional semester is the standard).

## ASSOCIATE OF ARTS IN RADIO AND TELEVISION BROADCASTING

TOTAL SEMESTER CREDIT HOURS: 60

Students receive 24 credit hours (awarded as transfer credits) upon completion of an eight-month curriculum at the Specs Howard School of Media Arts. The following 36 credit hours must be taken at Lawrence Tech.

Course Number	Subject	Cr. Hrs.
COM 1001	University Seminar	1
COM 1103	English Composition	3
COM 2103	Technical & Prof. Communication	3
COM 2443	Introduction to Rhetoric/Logic	3
MCO 2543	Writing for Electronic/Print Media	3
MCO XXX3	Media Communication Elective	3
LLT 1213	World Masterpieces 1	3

# Lawrence Technological University

LLT 1223	World Masterpieces 2	3
SSC 2413	Foundations of Amer. Exp.	3
SSC 2423	Development of Amer. Exp.	3
MCS 1254	Geometry in Art	4
	Natural Science	3
	Natural Science Lab	1

For more information or to speak with an advisor, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, email [humchair@ltu.edu](mailto:humchair@ltu.edu), or visit Room S225 in the Science Building.

## ASSOCIATE OF SCIENCE IN CHEMICAL TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 62

### First Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1214*	Intro. to Math Analysis 1*	4
MCS 1003**	Intro. to Computer Applications**	3
	TOTAL	15

### Second Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1224*	Intro. to Math Analysis 2*	4
SSC 2413	Foundations of Amer. Exp.	3
	TOTAL	15

### Third Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2313	Organic Chemistry 1	3
CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
MCS 1142	Intro. to C	2
MCS 2023*	Statistical Methods*	3
SSC 2423	Development of Amer. Exp.	3
LDR 2001	Leadership Models & Practices	1
	TOTAL	16

### Fourth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry Lab	2
CHM 2631	Instrumental Lab	1
LLT 1223	World Masterpieces 2	3
PHY 1154	Intro. to Physical Principles	4



# Lawrence Technological University

LLT/SSC/PSY XXX <sub>3</sub>	Elective	3
		TOTAL 16

\*Qualified students wishing to continue on to the Bachelor of Science in Chemistry, Environmental Chemistry, or Chemical Biology should follow the calculus-based mathematics sequence for those degrees.

\*\*If MCS 100<sub>3</sub> is excused by placement, replace with COM 210<sub>3</sub> (Technical & Prof. Communication).

For more information, contact the Department of Natural Sciences at 248.204.3600, email [nschair@ltu.edu](mailto:nschair@ltu.edu), or visit Room S322 in the Science Building.

## ASSOCIATE OF SCIENCE IN GENERAL STUDIES

TOTAL SEMESTER CREDIT HOURS: 60

### First Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1002	University Studies Seminar	2
COM 1103	English Composition	3
MCS 1003	Intro. to Computer Applications	3
MCS XXX <sub>3</sub>	Elective	3
	Open Elective	3
		TOTAL 14

### Second Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
COM 2103	Technical & Prof. Communication	3
MCS 1XX <sub>4</sub>	Mathematics	4
	Open Elective	3
		TOTAL 16

### Third Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of Amer. Exp.	3
	Natural Sciences 1	3
	Open Electives	6
		TOTAL 15

### Fourth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 2001	Leadership Models & Practices	1
LLT/SSC/PSY XXX <sub>3</sub>	Elective	3
	Natural Sciences 2	3
	Natural Sciences Lab	1
	Open Electives	7
		TOTAL 15

While enrolled in the general studies program, students preparing to enter Lawrence Tech's four-year degree programs will complete courses that fulfill the general education requirements common to all

# Lawrence Technological University

curricula. In most cases, students will also have the opportunity to complete foundational courses specific to their intended majors, provided that the applicable course prerequisites have been satisfied. Initial course selections will be determined on the basis of students' placement assessment results.

To be eligible to transfer into a four-year major, students must have achieved satisfactory performance in a minimum of 12 credit hours of course work, including specific courses applicable to their programs of choice. Students must see their academic advisors for additional information on course prerequisites, appropriate choices for elective courses, transfer eligibility requirements, and further information specific to their degree programs. Students participating in the Michigan Tuition Incentive Program (TIP) must complete the General Studies degree to be eligible for Phase II benefits.

For more information or to speak with an advisor, contact the College of Arts and Sciences at 248.204.3500, email [scidean@ltu.edu](mailto:scidean@ltu.edu), or visit Room S101 in the Science Building.

## BACHELOR OF ARTS IN ENGLISH AND COMMUNICATION ARTS

TOTAL SEMESTER CREDIT HOURS: 122

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
LLT 2XX3	Foreign Language 1	3
PSY 1213	Introductory Psychology	3
MCS 1203	Logic	3
	TOTAL	13

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
LLT 2XX3	Foreign Language 2	3
MCS 1XX4	Mathematics Elective	4
	Natural Sciences 1	3
	Natural Sciences Lab	1
	TOTAL	17

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CRW 2513	Creative Writing	3
COM 2103	Technical & Prof. Communication	3
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of Amer. Exp.	3
	Natural Sciences 2	3
COM 3000	Writing Proficiency Exam	0
LDR 2001	Leadership Models & Practices	1
	TOTAL	16

#### SECOND SEMESTER

## Lawrence Technological University

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2113	Speech	3
COM 2443	Intro. to Rhetoric & Logic	3
LLT 3413	British Lit.: Self and Society	3
LLT 3443	Amer. Lit.: Contact to the Civil War	3
LLT 2003	Sophomore Internship/Project	3
	<b>TOTAL</b>	<b>15</b>

### Junior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 3423	British Lit.: Reason & Revolution	3
LLT 3453	Amer. Lit.: Reconstruction to Present	3
COM 3553	Interpersonal and Nonverb. Comm.	3
LLT 3613 <b>or</b>	Literature & Art	
LLT 3623	Literature & Science	3
SSC 3733	Aesthetics	3
LDR 3000	Leadership Seminar Series	0
	<b>TOTAL</b>	<b>15</b>

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 3433	British Lit.: Victorian & Modern	3
LLT 3463	Amer. Lit.: Race, Ethnicity, Identity	3
CRW 3113	Special Topics in Creative Writing	3
LLT 4533	Criticism, Theory, Cultural Studies	3
	Open Elective	3
	<b>TOTAL</b>	<b>15</b>

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 4213	Shakespeare in Production	3
LLT 4513	Seminar in Literature	3
COM 3543	Technical Editing	3
CRW 4113	Adv. Creative Writing	3
	Open Elective	3
	<b>TOTAL</b>	<b>15</b>

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 4223	Senior Internship	3
LLT 4904	Senior Thesis	4
SSC 4513	Seminar in Social Science	3
	Open Electives	6
	<b>TOTAL</b>	<b>16</b>

### CERTIFICATE IN TECHNICAL AND PROFESSIONAL COMMUNICATION

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
COM 2113	Speech	3
COM 3553 <b>or</b>	Interpersonal & Nonverb. Comm. <b>or</b>	

# Lawrence Technological University

COM 3563	Collaborative Communication for Leaders	3
Two additional Communication electives at 2000 level or higher		6
		TOTAL 15

For more information or to speak with an advisor, contact the Humanities, Social Sciences, and Communication Department at 248.204.3520, email [humchair@ltu.edu](mailto:humchair@ltu.edu), or visit Room S225 in the Science Building.

## BACHELOR OF SCIENCE IN CHEMICAL BIOLOGY

TOTAL SEMESTER CREDIT HOURS: 126

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
COM 1001	University Seminar	1
COM 1103	English Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
		TOTAL 16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 L Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
		TOTAL 16

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2313	Organic Chemistry 1	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
SSC 2413	Foundations of Amer. Exp.	3
		TOTAL 17

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 2203	Anatomy & Physiology	3
BIO 2201	Anatomy & Physiology Lab	1
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2

# Lawrence Technological University

PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
SSC 2413	Development of Amer. Exp.	3
LDR 2001	Leadership Models & Practices	1
	TOTAL	17

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
CHM 3452	Intermed. Inorganic Chemistry*	2
CHM/BIO XXX3	Technical Elective	3
MCS XXX3	Adv. Math Elective	3
COM 2103	Technical & Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 3423	Physical Chemistry 1	3
CHM 3431	Phys Chemistry 1 Lab	1
CHM 2631*	Instrumental Lab*	1
CHM 4723*	Adv. Organic Chemistry*	3
PSC 3001	Intro. to Projects in Science	1
BIO 2323	Molecular Genetics	3
SSC/PSY XXX3	Elective	3
	TOTAL	15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
CHM/BIO XXX3	Technical Elective	3
CHM 4912	Senior Project 1	2
LLT 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	Open Elective	3
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 3113	Cell Biology	3
BIO 3121	Cell Biology Lab	1
CHM 4403*	Adv. Biochemistry*	3
CHM 4922	Senior Project 2	2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Elective	3
	TOTAL	15

# Lawrence Technological University

\*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information, contact the Department of Natural Sciences at 248.204.3600, email [nschair@ltu.edu](mailto:nschair@ltu.edu), or visit Room S322 in the Science Building.

## BACHELOR OF SCIENCE IN CHEMISTRY

TOTAL SEMESTER CREDIT HOURS: 125

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of Amer. Exp.	3
		TOTAL 15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
SSC 2423	Development of Amer. Exp.	3
		TOTAL 15

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2313	Organic Chemistry 1	3
CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
LDR 2001	Leadership Models & Practices	1
		TOTAL 16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
LLT 1223	World Masterpieces 2	3
MCS 3403 or MCS 2423	Probability & Statistics or Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1

# Lawrence Technological University

TOTAL 15

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 3434	Physical Chemistry 2	4
CHM 3441	Physical Chemistry 2 Lab	1
CHM 3452	Intermed. Inorganic Chemistry*	2
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
CHM 3001	Computational Chemistry 1	1
COM 2103	Technical & Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0

TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 3423	Physical Chemistry 1	3
CHM 3431	Physical Chemistry 1 Lab	1
CHM 4632*	Instrumental Analysis Lab*	2
CHM 4643*	Adv. Inorganic Chemistry*	3
PSC 3001	Intro. to Projects in Science	1
SSC/PSY XXX3	Elective	3
	Open Elective	3

TOTAL 16

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 3463*	Adv. Synthesis Lab*	3
CHM 4001	Computational Chemistry 2	1
CHM XXX3	Elective	3
CHM 4912	Senior Project 1	2
LLT 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	Open Electives	4

TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 4522*	Adv. Spectroscopy*	2
CHM 4541*	Adv. Spectroscopy Lab*	1
CHM 4723*	Adv. Organic Chemistry*	3
CHM 4922	Senior Project 2	2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Electives	6

TOTAL 17

# Lawrence Technological University

\*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information contact the Department of Natural Sciences at 248.204.3600, email [nschair@ltu.edu](mailto:nschair@ltu.edu), or visit Room 322 in the Science Building.

## Engineering Chemistry Concentration

TOTAL SEMESTER CREDIT HOURS: 128

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of Amer. Exp.	3
	TOTAL	15

#### SECOND SEMESTER

CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
SSC 2423	Development of Amer. Exp.	3
	TOTAL	15

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2313	Organic Chemistry 1	3
EXX XXX2	Engr. Computer Applications	2
LLT 1223	World Masterpieces 2	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
	TOTAL	16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
EGE 1023	Engineering Materials I	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
LDR 2001	Leadership Models & Practices	1
	TOTAL	16

### Junior/Senior Years (Engineering Chemistry Concentration)



## Lawrence Technological University

Because of its highly flexible nature, there is no standard curricular pattern for the Engineering Chemistry concentration in the junior and senior years. A detailed plan of work leading to the degree will be established in collaboration with the student's advisor by the fall term of the junior year. Unlike other chemistry degrees at Lawrence Tech, the specified curriculum for the engineering chemistry concentration does not automatically lead to certification of the degree by the American Chemical Society (ACS). With an appropriate selection of electives (especially laboratory electives), ACS certification can be awarded on a case-by-case basis. Students wishing to obtain ACS certification within the engineering chemistry concentration should consult with their advisors as early as possible to ensure that a suitable mix of electives is chosen.

The following courses are required to complete the BS in Chemistry with a concentration in Engineering Chemistry

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 3423	Physical Chemistry 1	3
CHM 3431	Physical Chemistry 1 Lab	1
CHM 3434	Physical Chemistry 2	4
CHM 3441	Physical Chemistry 2 Lab	1
CHM 3452	Intermed. Inorganic Chemistry*	2
CHM 4912	Senior Project 1 <sup>1</sup>	2
CHM 4922	Senior Project 2 <sup>1</sup>	2
CHM XXXX	Chemistry Electives <sup>2</sup>	9
COM 2103	Technical & Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0
LDR 4000	Leadership Capstone	0
EEE 2123	Circuits	3
EME 2011	Engr. Materials Lab	1
EME 3013	Mechanics of Materials	3
EME 3043	Dynamics	3
EME 3024	Fluid Mechanics	4
EME 4013	Heat Transfer	3
EME 3033	Engr. Numerical Methods	3
	Engineering Electives	6
LLT 3XX3/4XX3	Junior/Senior Elective	3
PSC 3001	Intro. to Projects in Science	1
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
SSC/PSY XXX3	Elective	3
	Open Elective	3

<sup>1</sup> Dual majors may substitute the corresponding engineering course, providing the project topic is approved in writing by both departments.

<sup>2</sup> A list of currently approved courses can be obtained from the department website or in room S322 in the Science Building.

For more information contact the Department of Natural Sciences at 248.204.3600, email [nschair@ltu.edu](mailto:nschair@ltu.edu), or visit Room 322 in the Science Building.

# Lawrence Technological University

## BACHELOR OF SCIENCE IN ENVIRONMENTAL CHEMISTRY

TOTAL SEMESTER CREDIT HOURS: 123

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of Amer. Exp.	3
		TOTAL 15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
SSC 2423	Development of Amer. Exp.	3
		TOTAL 15

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2313	Organic Chemistry 1	3
CHM 2342	Analytical Chemistry	2
CHM 2352	Analytical Chemistry Lab	2
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4
LDR 2001	Leadership Models & Practices	1
		TOTAL 16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
LLT 1223	World Masterpieces 2	3
		TOTAL 16

### Junior Year (Example)

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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## Lawrence Technological University

CHM 3434	Physical Chemistry 2	4	
CHM 3441	Physical Chemistry 2 Lab	1	
CHM 3452	Intermed. Inorganic Chemistry*		2
CHM 3403	Biochemistry	3	
CHM 3411	Biochemistry Lab	1	
CHM 3001	Computational Chemistry 1	1	
COM 2103	Technical & Prof. Communication	3	
COM 3000	Writing Proficiency Exam	0	
LDR 3000	Leadership Seminar Series	0	
		TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>	
CHM 3423	Physical Chemistry 1	3	
CHM 3431	Physical Chemistry 1 Lab	1	
CHM 4632*	Instrumental Analysis Lab*	2	
MCS 3XX3/4XX3	Junior/Senior Math Elective	3	
PSC 3001	Intro. to Projects in Science	1	
GLG 1103	Geology	3	
SSC/PSY XXX3	Elective	3	
		TOTAL	16

### Senior Year (Example)

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>	
CHM 3463*	Adv. Synthesis Lab*	3	
CHM 4001	Computational Chemistry 2	1	
CHM 3383*	Environmental Chemistry*	3	
CHM 4912	Senior Project 1	2	
LDR 4000	Leadership Capstone	0	
LLT 3XX3/4XX3	Junior/Senior Elective	3	
	Open Elective	3	
		TOTAL	15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>	
CHM 4522*	Adv. Spectroscopy*	2	
CHM 4541*	Adv. Spectroscopy Lab*	1	
CHM 3392*	Environmental Sampling Methods*	2	
CHM 3592*	Environmental Chemistry 2*	2	
CHM 4922	Senior Project 2		2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3	
	Open Elective	3	
		TOTAL	15

\*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

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# Lawrence Technological University

## BACHELOR OF SCIENCE IN COMPUTER SCIENCE

### Business Software Development Concentration

TOTAL SEMESTER CREDIT HOURS: 122

The Business Software Development concentration for the Bachelor of Science in Computer Science is designed for the student interested in non-scientific applications. It prepares the student for database, Web, and business application development.

#### Freshman Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1524	Intro. to Discrete Math	4
MCS 1142	Intro. to C	2
MCS 1214	Intro. to Math Analysis 1	4
SSC 2413	Foundations of Amer. Exp.	3
		TOTAL 17

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2423	Development of Amer. Exp.	3
MCS 1224	Intro. to Math Analysis 2	4
MCS 1514	Computer Science 1	4
		TOTAL 14

#### Sophomore Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Math	3
SSC/PSY XXX3	Elective	3
	Natural Sciences 1	3
		TOTAL 16

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LDR 2001	Leadership Models & Practices	1
MCS 2534	Data Structures	4
MCS 3633	Functional Programming	3
	Natural Sciences 2	3
	Natural Sciences Lab	1
		TOTAL 15

#### Junior Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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## Lawrence Technological University

MCS 2113	Statistics 1	3
MSC 3543	Data Base Systems	3
MCS 3663	Architecture & Assembly	3
MCS XXX3	Computer Science Electives (2)	6
COM 3000	Writing Proficiency Exam	0
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2123	Statistics 2	3
MCS 4663	Operating Systems	3
MCS 4623	Software Engineering	3
MCS XXX3	Computer Science Elective	3
LDR 3000	Leadership Seminar Series	0
	Open Elective	3
	<b>TOTAL</b>	<b>15</b>

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4613	Computer Networks	3
MCS 4833	Senior Project	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 3XX3/4XX3	Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS 4653	Theory of Computation	3
LDR 4000	Leadership Capstone	0
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

### Game Software Development Concentration

TOTAL SEMESTER CREDIT HOURS: 129

The Game Software Development concentration for the Bachelor of Science in Computer Science is an exciting option for students interested in preparing for a career in the rapidly expanding game development industry.

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
PSY 1213	Introductory Psychology	3
MCS 1142	Intro. to C	2
MCS 1414	Calculus 1	4
MCS 1643	Intro. to Games & Animation	3
	<b>TOTAL</b>	<b>16</b>

# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
MCS 16X3	Game Genre Studio	3
		TOTAL 17

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GAM 2213	History of Game Design	3
MCS 3563	Game Design	3
LDR 2001	Leadership Models & Practices	1
MCS 2414	Calculus 3	4
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Math	3
		TOTAL 18

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
LLT 1223	World Masterpieces 2	3
MCS 2534	Data Structures	4
MCS 2XX3	Sophomore Game Studio	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
		TOTAL 17

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 3863	Linear Algebra	3
MCS 3663	Architecture & Assembly	3
LLT 4523	Creative Writing	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
COM 3000	Writing Proficiency Exam	0
		TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3543	Data Base Systems	3
MCS 3573	Game Development	3
MCS 3633	Functional Programming	3
MCS 3503	Graphics Programming	3
MCS 4633	Artificial Intelligence	3

## Lawrence Technological University

MCS 4663	Operating Systems	3
LDR 3000	Leadership Seminar Series	0
	TOTAL	18

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4613	Computer Networks	3
MCS 4833	Senior Project	3
MCS 4653	Theory of Computation	3
MCS 3683	Principles of Animation	3
LDR 4000	Leadership Capstone	0
	TOTAL	12

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 3Xx3/4XX3	Junior/Senior Elective	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS4623	Software Engineering	3
MCS 4843	Senior Project 2	3
	TOTAL	15

### Network Software Development Concentration

TOTAL SEMESTER CREDIT HOURS: 122

The Network Software Development concentration for the Bachelor of Science in Computer Science is designed for the student interested in the technical aspects of networking. It prepares the student for analysis and tuning of networks and distributed computing environments.

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1142	Intro. to C	2
MCS 1214	Intro. to Math Analysis 1	4
MCS 1524	Intro. to Discrete Math	4
	TOTAL	14

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 1224	Intro. to Math Analysis 2	4
MCS 1514	Computer Science 1	4
MCS 1623	Visual Basic	3
	TOTAL	17

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3

# Lawrence Technological University

MCS 2514	Computer Science 2	4
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MCS 2523	Discrete Math	3
SSC 2423	Development of Amer. Exp.	3
	Natural Sciences 1	3
	<b>TOTAL</b>	<b>16</b>

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LDR 2001	Leadership Models & Practices	1
MCS 2534	Data Structures	4
MCS 3673	Network Administration	3
	Natural Sciences 2	3
	Natural Sciences Lab	1
	<b>TOTAL</b>	<b>15</b>

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2113	Statistics 1	3
MSC 3543	Data Base Systems	3
MCS 3663	Architecture & Assembly	3
MCS XXX3	Computer Science Elective	3
SSC/PSY XXX3	Elective	3
COM 3000	Writing Proficiency Exam	0
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2123	Statistics 2	3
INT 3103	Info. Technology Mgmt.	3
MCS 4663	Operating Systems	3
LDR 3000	Leadership Seminar Series	0
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4613	Computer Networks	3
MCS 4623	Software Engineering	3
MCS 4833	Senior Project	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	Open Elective	3
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 3XX3/4XX3	Junior/Senior Elective	3
INT 4203	Systems Analysis	3



# Lawrence Technological University

MCS XXX3	Computer Science Elective	3
	Open Electives	6
	TOTAL	15

## Scientific Software Development Concentration

TOTAL SEMESTER CREDIT HOURS: 123

The Scientific Software Development concentration for the Bachelor of Science in Computer Science is the best selection for the greatest flexibility. It prepares the student for graduate work in computer science as well as professional software development in any application.

## Freshman Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1142	Intro. to C	2
MCS 1414	Calculus 1	4
SSC 2413	Foundations of Amer. Exp.	3
	TOTAL	13

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
SSC 2423	Development of Amer. Exp.	3
SSC/PSY XXX3	Elective	3
	TOTAL	17

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
LDR 2001	Leadership Models & Practices	1
MCS 2414	Calculus 3	4
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Math	3
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 2534	Data Structures	4
MCS 3633	Functional Programming	3
MCS XXX3	Computer Science Elective	3
LDR 3000	Leadership Seminar Series	0
	Open Elective	3
	TOTAL	16

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3543	Data Base Systems	3

# Lawrence Technological University

MCS 3663	Architecture & Assembly	3
MCS 2423 <b>or</b> MCS 3403 <b>or</b> MCS 3863	Differential Equations <b>or</b> Probability & Statistics <b>or</b> Linear Algebra	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS XXX3	Computer Science Elective	3
COM 3000	Writing Proficiency Exam	0
	<b>TOTAL</b>	<b>16</b>

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4663	Operating Systems	3
MCS XXX3	Computer Science Elective	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	Open Electives	6
	<b>TOTAL</b>	<b>16</b>

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4613	Computer Networks	3
MCS 4643	Software Engineering	3
MCS 4833	Senior Project	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	Open Elective	3
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT3XX3/4XX3	Junior/Senior Elective	3
MCS 4643	Comparative Prog. Languages	3
MCS 4653	Theory/Computation	3
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

For more information or to speak with an advisor, contact the Department of Mathematics and Computer Science at 248.204.3560, email [mcschair@ltu.edu](mailto:mcschair@ltu.edu), or visit Room S120 in the Science Building.

## DUAL MAJOR IN COMPUTER SCIENCE

Students can earn a dual major in computer science and another discipline by completing the degree requirements of both programs.

# Lawrence Technological University

## CERTIFICATE IN COMPUTER SCIENCE

The Certificate in Computer Science requires a grade point average of 2.0 or better in the following courses:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 1514	Computer Science 1	4
MCS 2514	Computer Science 2	4
MCS 2534	Data Structures	4
MCS 2523	Discrete Math	3
MCS 3543	Intro. to Database Systems	3
MCS 3663	Architecture & Assembly	3
MCS 4623	Intro. to Software Engineering	3
MCS 4653	Theory of Computation	3
MCS 4663	Operating Systems	3
	TOTAL	30

All but MCS 1514 and MCS 2514 must be taken at Lawrence Tech.

For more information or to speak with an advisor, contact the Mathematics and Computer Science Department at 248.204.3560, email [mcschair@ltu.edu](mailto:mcschair@ltu.edu), or visit Room S120 in the Science Building.

## BACHELOR OF SCIENCE IN HUMANITIES

TOTAL SEMESTER CREDIT HOURS: 121

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1003	Intro. to Computer Applications	3
MCS 1203	Logic	3
PSY 1213	Introductory Psychology	3
	Natural Sciences 1	3
	TOTAL	16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 1254	Geometry in Art	4
	Natural Sciences 2	3
	Natural Sciences Lab	1
	TOTAL	14

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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# Lawrence Technological University

COM 2103	Technical & Prof. Communication	3
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of Amer. Exp.	3
LDR 2001	Leadership Models & Practices 1	
	Humanities Elective	3
	Open Elective	3
	<b>TOTAL</b>	<b>16</b>

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2113	Speech	3
SSC 2303	Principles of Economics	3
COM 3000	Writing Proficiency Exam	0
	Humanities Electives	6
	Open Elective	3
	<b>TOTAL</b>	<b>15</b>

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 3000	Leadership Seminar Series	0
LLT/CRW XXX3	Elective	3
	Thesis Concentration Elective	3
SSC XXX3	Elective	3
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT/CRW XXX3	Literature/Creative Writing Elective	3
	Thesis Concentration Elective	3
SSC XXX3	Elective	3
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 4000	Leadership Capstone	0
COM/MCO XXX3	Elective	3
	Thesis Concentration Electives	6
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM/MCO XXX3	Elective	3
	Senior Thesis or Project	3
	Open Electives	9
	<b>TOTAL</b>	<b>15</b>

**Note:** Social Sciences, Communication, and open electives must be taken at the 3000 or 4000 level.

# Lawrence Technological University

For more information, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, email [humchair@ltu.edu](mailto:humchair@ltu.edu), or visit Room S225 in the Science Building.

## BACHELOR OF SCIENCE IN MATHEMATICS

TOTAL SEMESTER CREDIT HOURS: 123

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1514	Computer Science 1	4
MCS 1414	Calculus 1	4
	TOTAL	16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 1223	University Chemistry 2	3
SSC/PSY XXX3	Elective	3
MCS 1424	Calculus 2	4
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 1XX1	Seminar	1
	TOTAL	17

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
LDR 2001	Leadership Models & Practices	1
MCS 2414	Calculus 3	4
MCS 2523	Discrete Math	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LLT 1223	World Masterpieces 2	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
MCS 2XX1	Seminar	1
	TOTAL	14

### Junior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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## Lawrence Technological University

MCS 3723	Adv. Calculus	3
MCS 3543	Data Base Systems	3
MCS 3863	Linear Algebra	3
MCS 3403	Probability & Statistics	3
MCS 3XX1	Seminar	1
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0
	Open Elective	3
	<b>TOTAL</b>	<b>16</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
MCS 3523	Math Modeling	3
MCS 3743	Complex Analysis	3
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3733	Partial Differential Equations	3
MCS 4813	Numerical Analysis 1	3
MCS 3XX3/4XX3	Junior/Senior Math Elective	3
LDR 4000	Leadership Capstone	0
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 3XX3/4XX3	Junior/Senior Elective	3
MCS 4863	Modern Algebra	3
MCS 4833	Senior Project	3
	Open Electives	6
	<b>TOTAL</b>	<b>15</b>

### DUAL MAJOR IN MATHEMATICS

Students can earn a dual major in mathematics and another discipline by completing the degree requirements of both programs.

For more information or to speak with an advisor, contact the Department of Mathematics and Computer Science at 248.204.3560, email [mcschair@ltu.edu](mailto:mcschair@ltu.edu), or visit Room S120 in the Science Building.

### BACHELOR OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE

TOTAL SEMESTER CREDIT HOURS: 122

#### Freshman Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3

# Lawrence Technological University

CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1514	Computer Science 1	4
MCS 1414	Calculus 1	4
	TOTAL	16

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 1424	Calculus 2	4
MCS 2514	Computer Science 2	4
MCS 1XX1	Seminar	1
	TOTAL	15

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of Amer. Exp.	3
MCS 2414	Calculus 3	4
MCS 2523	Discrete Math	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
	TOTAL	17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 2001	Leadership Models & Practices	1
MCS 2XX1	Seminar	1
MCS 2423	Differential Equations	3
MCS 2534	Data Structures	4
COM 2103	Technical & Prof. Communication	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
	TOTAL	16

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3663	Comp. Arch. & Assembly Prog.	3
MCS 3723	Adv. Calculus	3
MCS 3543	Data Base Systems	3
MCS 3863	Linear Algebra	3
MCS 3403	Probability & Statistics	3
MCS 3XX1	Seminar	1
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0
	TOTAL	16

### SECOND SEMESTER

## Lawrence Technological University

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3523	Math Modeling	3
MCS 3743	Complex Analysis	3
MCS 4663	Operating Systems	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
SSC/PSY XXX3	Elective	3
		TOTAL 15

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4833	Senior Project	3
MCS 3733	Partial Differential Equations	3
MCS 4813	Numerical Analysis 1	3
MCS 4613	Computer Networks	3
LDR 4000	Leadership Capstone	0
	Open Elective	3
		TOTAL 15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4653	Theory of Computation	3
MCS 4863	Modern Algebra	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Elective	3
		TOTAL 12

For more information or to speak with an advisor, contact the Department of Mathematics and Computer Science at 248.204.3560, email [mcschair@ltu.edu](mailto:mcschair@ltu.edu), or visit Room S120 in the Science Building.

## BACHELOR OF SCIENCE IN MEDIA COMMUNICATION

### Film, Television and Video Production concentration

TOTAL SEMESTER CREDIT HOURS: 121

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCO 2003	Intro. to Video Production	3
PSY 1213	Introductory Psychology	3
MCS 1003	Intro. to Computer Applications3	
MCS 1203	Logic	3
		TOTAL 16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 1254	Geometry in Art	4
MCO 1003	Media, Comm., & Society	3
COM 2113	Speech	3
LLT 1213	World Masterpieces 1	3



# Lawrence Technological University

MCO 3513	Audio for TV & Video Production	3
	TOTAL	16

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCO 2563	Intro. to Broadcast Studio	3
MCO 2543	Writing for Electronic/Print Media	3
MCO 3303	Video Editing	3
LLT 1223	World Masterpieces 2	3
LDR 2001	Leadership Models & Practices	1
COM 2103	Technical & Prof. Communication	3
	TOTAL	16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCO 3203	Camera for Broadcast	3
SSC 2413	Foundations of Amer. Exp.	3
COM 2443	Intro. to Rhetoric	3
	Natural Sciences 1	3
	Natural Sciences 1 Lab	1
	Open Elective	3
	TOTAL	16

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCO 3633	Social Media	3
SSC 2423	Development of Amer. Exp.	3
COM/MCO 3XX3/4XX3	Junior/Senior Elective	3
	Natural Sciences 2	3
LDR 3000	Leadership Seminar Series	0
COM 3000	Writing Proficiency Exam	0
	Open Elective	3
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCO 3613	Broadcast Studio Techniques	3
MCO 3913	Media Comm. Internship	3
MCO 3713	Adv. Writing for Media	3
SSC 3723 or	Ethics or	
COM XXX3	Communication Law	3
LLT 3XX3/4CC3	Junior/Senior Elective	3
	TOTAL	15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MKT 3013	Principles of Marketing	3
LDR 4000	Leadership Capstone	0
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3

# Lawrence Technological University

MCO 3XX3/4XX3	Junior/Senior Electives (2)	6
	Open Elective	3
	TOTAL	15

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCO 4933	Senior Prod. Practicum	3
MCO 3XX3/4XX3	Junior/Senior Elective	6
	Open Electives	3
	TOTAL	12

## CERTIFICATE IN TELEVISION AND VIDEO PRODUCTION

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCO 2003	Intro. to Video Production	3
MCO 2543	Writing for Electronic/Print Media	3
MCO 3203	Camera for Broadcast	3
MCO 3303	Video Editing	3
MCO XXX3	Elective	3
	TOTAL	15

For more information or to speak with an advisor, contact the Department of Humanities, Social Sciences, and Communication at 248.204.3520, email [humchair@ltu.edu](mailto:humchair@ltu.edu), or visit Room S225 in the Science Building.

## BACHELOR OF SCIENCE IN MOLECULAR AND CELL BIOLOGY

TOTAL SEMESTER CREDIT HOURS: 123

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
COM 1001	University Seminar	1
COM 1103	English Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
	TOTAL	16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
	TOTAL	16

### Sophomore Year

#### FIRST SEMESTER

# Lawrence Technological University

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2313	Organic Chemistry 1	3
LLT 1223	World Masterpieces 2	3
MCS 2113	Statistics 1	3
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
SSC 2413	Foundations of Amer. Exp.	3
LDR 2001	Leadership Models & Practices	1
		TOTAL 17

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 2203	Anatomy & Physiology	3
BIO 2201	Anatomy & Physiology Lab	1
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
SSC 2413	Development of Amer. Exp.	3
		TOTAL 16

## Junior Year (Example)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 3813*	Neurobiology*	3
CHM 3403	Biochemistry	3
CHM 3411	Biochemistry Lab	1
COM 2103	Technical & Prof. Communication	3
LDR 3000	Leadership Seminar Series	0
	Open Electives	6
COM 3000	Writing Proficiency Exam	0
		TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 2323*	Molecular Genetics*	3
SSC/PSY XXX3	Elective	3
BIO XXX3	Special Topics	3
PSC 3001	Intro. to Projects in Science	1
	Open Elective	3
		TOTAL 13

## Senior Year (Example)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 4103*	Evolution*	3
BIO XXX3	Technical Elective	3
BIO 4912	Senior Project 1	2
LLT 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	Open Elective	3

# Lawrence Technological University

TOTAL 14

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 4813	Cell Biology	3
BIO4811	Cell Biology Lab	1
BIO 4922	Senior Project 2	2
CHM/BIO XXX3	Technical Elective	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Open Elective	3
	TOTAL	15

\*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information or to speak with an advisor, contact the Department of Natural Sciences at 248.204.3600, email [nschair@ltu.edu](mailto:nschair@ltu.edu), or visit Room S322 in the Science Building.

## BACHELOR OF SCIENCE IN PHYSICS

TOTAL SEMESTER CREDIT HOURS: 125

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
MCS 1414	Calculus 1	4
SSC 2413	Foundations of Amer. Exp.	3
PSC 1161	Physical Science Seminar	1
	TOTAL	16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
PHY1213	Astronomy	3
PHY 1221	Astronomy Lab	1
MCS 1424	Calculus 2	4
SSC 2423	Development of Amer. Exp.	3
	TOTAL	16

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2414	Calculus 3	4

# Lawrence Technological University

COM 2103	Technical & Prof. Communication	3
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MCS 1142	Intro. to C	2
LLT 1213	World Masterpieces 1	3
LDR 2001	Leadership Models & Practices	1

TOTAL 17

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 2423	University Physics 2	3
PHY 2421	University Physics 2 Lab	1
MCS 2423	Differential Equations	3
MCS 3863	Linear Algebra	3
LLT 1223	World Masterpieces 2	3
SSC/PSY XXX3	Elective	3

TOTAL 16

## Junior Year (Example)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 3414*	Analytical Mechanics*	4
PHY 3653	Contemporary Physics	3
PHY 3661	Contemporary Physics Lab	1
MCS 3403	Probability & Statistics	3
MCS 3413 or MCS 3723	Adv. Engineering Math or Adv. Calculus	3
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0

TOTAL 14

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 3574 (EEE 3414)	Electricity & Magnetism	4
PHY 4724*	Quantum Mechanics*	4
PHY 3613 (EEE 2123)	Circuits & Electronics	3
PHY 3611 (EEE 2111)	Circuits Lab	1
PSC 3001	Intro. to Projects in Science	1
LLT 3XX3/4XX3	Junior/Senior Elective	3

TOTAL 16

## Senior Year (Example)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 4763*	Thermal Physics*	3
PHY 4912	Senior Project 1	2
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	Open Electives	7

TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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# Lawrence Technological University

PHY 4843*	Condensed Matter Physics*	3	
PHY 4743*	Optics, Lasers, & Microscopy*	3	
PHY 4781*	Optics, Lasers, & Microscopy Lab*	1	
PHY 4922	Senior Project 2		2
	Open Electives	6	
		TOTAL	15

\*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor.

For more information or to speak with an advisor, contact the Department of Natural Sciences at 248.204.3600, email [nschair@ltu.edu](mailto:nschair@ltu.edu), or visit Room S322 in the Science Building.

## BACHELOR OF SCIENCE IN PHYSICS AND COMPUTER SCIENCE

TOTAL SEMESTER CREDIT HOURS: 127

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>	
COM 1001	University Seminar	1	
COM 1103	English Composition	3	
CHM 1213	University Chemistry 1	3	
CHM 1221	University Chemistry 1 Lab	1	
MCS 1414	Calculus 1	4	
MCS 1514	Computer Science 1	4	
PSC 1161	Physical Science Seminar	1	
		TOTAL	17

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>	
CHM 1223	University Chemistry 2	3	
CHM 1232	University Chemistry 2 Lab	2	
PHY 1213	Astronomy	3	
PHY 1221	Astronomy Lab	1	
MCS 1424	Calculus 2	4	
MCS 2514	Computer Science 2	4	
		TOTAL	17

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>	
PHY 2413	University Physics 1	3	
PHY 2421	University Physics 1 Lab	1	
MCS 2414	Calculus 3	4	
MCS 2523	Discrete Math	3	
SSC 2413	Foundations of Amer. Exp.	3	
LDR 2001	Leadership Models & Practices	1	
		TOTAL	15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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# Lawrence Technological University

PHY 2423	University Physics 2	3
PHY 2421	University Physics 2 Lab	1
MCS 2423	Differential Equations	3
MCS 2534	Data Structures	4
LLT 1213	World Masterpieces 1	3
SSC 2423	Development of Amer. Exp.	3
	<b>TOTAL</b>	<b>17</b>

## Junior Year (Example)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 3653	Contemporary Physics	3
PHY 3661	Contemporary Physics Lab	1
MCS 3723	Adv. Calculus	3
MCS 3863	Linear Algebra	3
LLT 1223	World Masterpieces 2	3
COM 2103	Technical & Prof Communication	3
LDR 3000	Leadership Seminar Series	0
	<b>TOTAL</b>	<b>16</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 3574 (EEE 3414)	Electricity & Magnetism	4
PHY 4724*	Quantum Mechanics*	4
PSC 3001	Intro. to Projects in Science	1
MCS 3403	Probability & Statistics	3
SSC/PSY XXX3	Elective	3
COM 3000	Writing Proficiency Exam	0
	<b>TOTAL</b>	<b>15</b>

## Senior Year (Example)

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 3414*	Analytical Mechanics*	4
PHY 4912	Senior Project 1	2
MCS 4813	Numerical Analysis 1	3
MCS 3XX3/4XX3	Junior/Senior Elective	3
SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 4843*	Condensed Matter Physics*	3
PHY 4743*	Optics, Lasers, & Microscopy*	3
PHY 4781*	Optics, Lasers, & Microscopy Lab*	1
PHY 4922	Senior Project 2	2
MCS 3523	Math Modeling	3
LLT 3XX3/4XX3	Junior/Senior Elective	3
	<b>TOTAL</b>	<b>15</b>

# Lawrence Technological University

\*These courses are offered every two years. An individual plan of work will be developed in consultation with the student's advisor

For more information or to speak with an advisor, contact the Natural Sciences Department at 248.204.3600, email [nschair@ltu.edu](mailto:nschair@ltu.edu), or visit Room S322 in the Science Building.

## BACHELOR OF SCIENCE IN PSYCHOLOGY

### Clinical Psychology Concentration

TOTAL SEMESTER CREDIT HOURS: 123

#### Freshman Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1203*	Logic*	3
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
PSY 1213	Introductory Psychology	3
		TOTAL 14

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
PSY 2113	Research Methods	3
PSY 2613	Developmental Psychology	3
COM 2103	Technical & Prof. Communication	3
PSY 1003	World of the Mind	3
		TOTAL 16

\*MCS 1224 (Intro. to Math Analysis 2) may be taken in place of MCS 1203 (Logic) and MCS 2XX1 (Calculus Lab).

#### Sophomore Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
COM 2113	Speech	3
LLT 1213	World Masterpieces 1	3
MCS 4993	Biostatistics	3
MCS 4991	Calculus Lab	1
	Open Elective	3
LDR2001	Leadership Models & Practices	1
		TOTAL 17

##### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3



# Lawrence Technological University

SSC 2423	Development of Amer. Exp.	3
PSY 3623	Social Psychology	3
	Open Elective	3
PSY 2123	Experimental Design & Prog.	3
	TOTAL	15

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 3713	Topics in Psychology: Personality	3
PSY 3413	Sensation & Perception	3
PSY 3223	Experimental Psychology Lab	3
PSY 3633	Abnormal Psychology	3
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0
	Open Elective	3
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 3213	Cognitive Psychology	3
LLT/SSC 3XX3/4XX3	Junior/Senior Elective	3
PSY 4633	Clinical Psychology	3
PSY 4113	Psychology Internship	3
PSY 4413	History & Systems of Psych.	3
	TOTAL	15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 4313	Drugs & Behavior	3
PSY 4213	Cognitive Neuroscience	3
PSY 4912	Senior Research Project 1	2
PSY XXX3	Elective	3
LDR 4000	Leadership Capstone	0
	Open Elective	3
	TOTAL	14

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 3313 or	History & Philosophy of Science	3
SSC 3613	Philosophy of Mind	3
PSY 4922	Senior Research Project 2	2
PSY XXX3	Electives (2)	6
	Open Electives (2)	6
	TOTAL	17

# Lawrence Technological University

## Industrial/Organizational Psychology Concentration

TOTAL SEMESTER CREDIT HOURS: 123

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1203*	Logic*	3
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
PSY 1213	Introductory Psychology	3
		TOTAL 14

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
PSY 2113	Research Methods	3
PSY 1003	World of the Mind	3
COM 2103	Technical & Prof. Communication	3
PSY 2613	Developmental Psychology	3
		TOTAL 16

\*MCS 1224 (Intro. to Math Analysis 2) may be taken in place of MCS 1203 (Logic) and MCS 2XX1 (Calculus Lab)

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2113	Speech	3
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
PSY 3623	Social Psychology	3
MCS 4993	Biostatistics	3
MCS 4991	Calculus Lab	1
LDR 2001	Leadership Models & Practices	1
		TOTAL 17

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 3313	Industrial Psychology	3
LLT 1223	World Masterpieces 2	3
SSC 2423	Development of Amer. Exp.	3
MGT 2203	Management & Supervision	3
PSY 2123	Experimental Design & Prog.	3
		TOTAL 15

# Lawrence Technological University

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 3000	Leadership Seminar Series	0
COM 3000	Writing Proficiency Exam	0
PSY 3413	Sensation & Perception	3
PSY 3323	Organizational Psychology	3
PSY XXX3	Elective	3
HRM 3023	Human Resource Management	3
PSY 3223	Experimental Psychology Lab	3
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 3213	Cognitive Psychology	3
LLT/SSC 3XX3/4XX3	Junior/Senior Elective	3
PSY 4113	Psychology Internship	3
PSY 4413	History & Systems of Psych.	3
	Open Elective	3
		TOTAL 15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 4000	Leadership Capstone	0
HRM 4013	Employee/Mgmt. Relations	3
PSY 4213	Cognitive Neuroscience	3
PSY 4912	Senior Research Project 1	2
PSY XXX3	Elective	3
	Open Elective	3
		TOTAL 14

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 4922	Senior Research Project 2	2
HRM 4033	HR Problems & Policies	3
SSC 3313 or	History & Philosophy of Science or	
SSC 3713	Philosophy of the Mind	3
PSY XXX3	Elective	3
	Open Electives (2)	6
		TOTAL 17

## Pre-Med/Biobehavioral Psychology Concentration

TOTAL SEMESTER CREDIT HOURS: 122

## Freshman Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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# Lawrence Technological University

COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1414	Calculus 1	4
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
PSY 1213	Introduction to Psychology	3
		<b>TOTAL 15</b>

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
MCS 1424	Calculus 2	4
COM 2103	Technical & Prof. Communication	3
PSY 1003	World of the Mind	3
PSY 2113	Research Methods	3
		<b>TOTAL 17</b>

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 4993	Biostatistics	3
SSC 2413	Foundations of Amer. Exp.	3
LLT 1213	World Masterpieces 1	3
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
LDR 2001	Leadership Models & Practices	1
		<b>TOTAL 14</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 2123	Experimental Design & Prog.	3
SSC 2423	Development of Amer. Exp.	3
LLT 1223	World Masterpieces 2	3
CHM 1223	University Chemistry 2	3
CHM 1232	University Chemistry 2 Lab	2
COM2113	Speech	3
		<b>TOTAL 17</b>

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
PSY 3223	Experimental Psychology Lab	3
PSY 2613	Developmental Psychology	3
BIO 2323	Genetics	3
LDR 3000	Leadership Seminar Series	0
COM 3000	Writing Proficiency Exam	0
		<b>TOTAL 13</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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## Lawrence Technological University

PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
PSY 3213	Cognitive Psychology	3
LLT/SSC 3XX3/4XX3	Junior/Senior Elective	3
PSY 4113	Psychology Internship	3
PSY XXX3	Elective	3
		<b>TOTAL 16</b>

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 4000	Leadership Capstone	0
CHM 2313	Organic Chemistry	3
PSY 4213	Cognitive Neuroscience	3
PSY 3413	Sensation & Perception	3
PSY 3623	Social Psychology	3
PSY 4912	Senior Research Project 1	2
		<b>TOTAL 14</b>

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 2323	Organic Chemistry 2	3
CHM 2332	Organic Chemistry 2 Lab	2
CHM 3403	Biochemistry	3
PSY 4922	Senior Research Project 2	2
SSC 3313 or	History & Philosophy of Science or	
SSC 3713	Philosophy of the Mind	3
PSY 4413	History & Systems of Psych.	3
		<b>TOTAL 16</b>

### CERTIFICATE IN INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

Two of the following three courses:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
HRM 3023	Human Resource Management	3
HRM 4013	Employee/Mgmt. Relations	3
HRM 4033	HR Problems & Policies	3

and the following:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 3213	Cognitive Psychology	3
PSY 3313	Industrial Psychology	3
PSY 3323	Organizational Psychology	3
		<b>TOTAL 18</b>

For more information or to speak with an advisor, contact the Humanities, Social Sciences, and Communication Department at 248.204.3520, email [humchair@ltu.edu](mailto:humchair@ltu.edu), or visit Room S225 in the Science Building.

# Lawrence Technological University

## FOUNDATION STUDIES AND SPECIAL PROGRAMS

### Pre-Medical and Pre-Dental Sequences

The following courses are recommended for medical school admission. A student should contact a particular medical school for specific details about its admission policies.

#### **Biology**

#### **Cr. Hrs. Courses**

One year of general biology and laboratory 8 BIO 1213, BIO 1221, BIO 1223, BIO 1231

*One upper-level course from the following (recommended):*

Molecular Genetics 3 BIO 2323

Anatomy and Physiology and laboratory 4 BIO 2203, BIO 2201

Cell Biology and laboratory 4 BIO 4813, BIO 4821

#### **Chemistry**

#### **Cr. Hrs. Courses**

One year of general chemistry and laboratory 9 CHM 1213, CHM 1221, CHM 1223, CHM 1232 or CHM 1231

One year of organic chemistry and laboratory 8 CHM 2313, CHM 2323, CHM 2332

One biochemistry course (recommended) 3 CHM 3403

#### **Other Mathematics and Science**

#### **Cr. Hrs. Courses**

One year of physics and laboratory 8 University or College Physics

One year of math with calculus 8 MCS 1414 and MCS 1424 or MCS 1214 and MCS 1224

One or two courses in statistics 3–6 MCS 2023 or MCS 3403 or MCS 2113 and MCS 2123

These courses can most easily be incorporated into a BS in Chemistry, Psychology, Chemical Biology, Molecular and Cell Biology, Physics, or Biomedical Engineering, but they can also be satisfied in other majors with the appropriate choices of electives and/or additional courses.

#### **Pre-Law**

An advantage of the University's Core Curriculum is that it develops the skills of critical and logical thinking that are central to admission to, and success in, law school. In addition, students planning to attend law school should place the greatest emphasis on acquiring skill in both oral and written communication. Both the BS in Humanities and the BA in English and Communication Arts provide a thorough education in communication and critical thinking, skills essential to the study of law. The humanities degree, especially, provides excellent preparation by offering knowledge of the context and development of the U.S. system of law and government. Additional courses in four categories may be particularly valuable to pre-law students:

# Lawrence Technological University

## Business Management

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ACC 2013	Accounting Principles 1	3
ACC 2023	Accounting Principles 2	3
FIN 3013	Introduction to Financial Management	3
MGT 2203	Management & Supervision	3

## Communication

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2113	Speech	3
COM 2443	Introduction to Rhetoric & Logic	3
COM 3463	Collaborative Communication	3
COM 3553	Interpersonal & Nonverb. Comm.	3

## History, Philosophy, and Political Science

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 3153	American History to 1877	3
SSC 3163	American History since 1877	3
SSC 3173	American Political Tradition	3
SSC 3723	Ethics	3
SSC 4133	Problems in International Politics	3

## Law

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MGT 2113	Introduction to Business Law	3
SSC 4143	Constitutional Law: Individual Rights	3

**Contact Person:** Karen Evans, pre-law advisor, 248.204.3508, [kevans@ltu.edu](mailto:kevans@ltu.edu)

**Note:** Completion of the Lawrence Tech requirements in the pre-professional programs does not assure the student of admission to medical, dental, law, or graduate school. However, completion of the requirements and of other courses leading to a bachelor's degree does qualify a student for consideration by most professional and graduate schools.

## MINOR IN BIOLOGY

*Not available to students majoring in molecular and cell biology or in chemical biology.*

Required courses (8 credit hours)

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1

# Lawrence Technological University

Electives (minimum of 12 credit hours)

Selected from biology courses numbered 2000 or higher	12
<b>TOTAL</b>	<b>20</b>

For more information, contact [nschair@ltu.edu](mailto:nschair@ltu.edu)

## MINOR IN BUSINESS

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MGT 1212	Intro. to Business/ Issues & Practices	2
SSC 2303	Principles of Economics	3

Five upper-division courses in management or human resources  
(Must include one course in Human Resource Management – Leadership  
and one course in Entrepreneurship.)

15  
**TOTAL 20**

For more information, contact Karen Evans, director of undergraduate management programs, at 248.204.3508 or email [ump@ltu.edu](mailto:ump@ltu.edu).

## MINOR IN CHEMISTRY

*Because of extensive curriculum overlap this minor is not available to students majoring in chemistry, environmental chemistry, or chemical biology, students who graduate under the chemical physics concentration in physics, or students who have been awarded the Associate of Science in Chemical Technology.*

Required Courses (8 to 9 credit hours)

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1231 <b>or</b>	Chemistry 2 Lab <b>or</b>	
CHM 1232	University Chemistry 2 Lab	1-2

Chemistry Electives (minimum of 11 credit hours)  
selected from chemistry courses numbered  
2000 or higher, except CHM 3144.

**TOTAL 19/20**

For more information, contact [nschair@ltu.edu](mailto:nschair@ltu.edu)

## MINOR IN COMPUTER SCIENCE

Students must take 24 credit hours of computer science courses.

For more information, contact [mcschair@ltu.edu](mailto:mcschair@ltu.edu)



# Lawrence Technological University

## MINOR IN ECONOMICS

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 1214	Intro. to Math Analysis 1	4
MCS 1224	Intro. to Math Analysis 2	4
SSC 2303	Principles of Economics	3
SSC 2403	Principles of Economics 2	3
Three upper-division courses in economics		9
		TOTAL 23

**Note:** SSC 3523 (Money and Banking) is an economics course.

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

## MINOR IN ENGLISH

Five upper-division courses in literature  
(not including prerequisites) 15

Prerequisites:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
LLT 1223	World Masterpieces 2	3
		TOTAL 21 (including prereqs)

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

## MINOR IN GENERAL SCIENCES

*Because of extensive overlap with the curriculum of the primary degree this minor is not available to students majoring in any program in the Department of Natural Sciences or in Biomedical Engineering.*

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
BIO 1223	Biology 2	3
BIO 1231	Biology 2 Lab	1
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
CHM 1223	University Chemistry 2	3
CHM 1231 or	Chemistry 2 Lab or	
CHM 1232	University Chemistry 2 Lab	1-2

One of the following physics sequences is required:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 2413	University Physics 1	3

## Lawrence Technological University

PHY 2421	University Physics 1 Lab	1
PHY 2423	University Physics 2	3
PHY 2431 <b>or</b>	University Physics 2 Lab <b>or</b>	1
PHY 2213	College Physics 1	3
PHY 2221	College Physics 1 Lab	1
PHY 2223	College Physics 2	3
PHY 2231	College Physics 2 Lab	1
		TOTAL 24–25

All prerequisites and co-requisites must be satisfied for these required courses. Those who wish to receive a certificate for this minor must apply to the Department of Natural Sciences, in Room S322.

For more information, contact [nschair@ltu.edu](mailto:nschair@ltu.edu)

### MINOR IN HISTORY

Five upper-division courses in history  
(not including prerequisites) 15

Prerequisites:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
SSC 2423	Development of Amer. Exp.	3
		TOTAL 21 (including prereqs)

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

### MINOR IN MATHEMATICS

An average grade point of 2.0 or higher must be maintained.

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 1414	Calculus 1	4
MCS 1424	Calculus 2	4
MCS 2414	Calculus 3	4
MCS 2423	Differential Equations	3
MCS 2523	Discrete Mathematics	3
MCS 3403	Probability & Statistics	3
MCS 3863	Linear Algebra	3
Six (6) more credit hours of junior- or senior-level mathematics courses		6
		TOTAL 30

For more information, contact [mcschair@ltu.edu](mailto:mcschair@ltu.edu)

### MINOR IN MEDIA COMMUNICATION

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCO 2003	Intro. to Video Production	3
MCO 2543	Writing for Electronic Print/Media	3

## Lawrence Technological University

MCO 3203	Camera for Broadcast News	3
MCO 2643	Discovery News and Radio Reporting	3
MCO 3303	Video Editing	3
MCO 3843 or	Broadcast News Writing and Reporting or	
MCO 3713	Adv. Writing for Media	3
	TOTAL	18

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

### MINOR IN PHILOSOPHY

Five upper-division courses in philosophy (not including prerequisites)	15
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**Note:** SSC 3723 (Ethics) and SSC 3733 (Aesthetics) are philosophy courses. MCS 1203 (Logic) may also be taken in place of one of these classes.

Prerequisites:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
SSC 2423	Development of Amer. Exp.	3
	TOTAL	21 (including prereqs)

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

### MINOR IN PHYSICS

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
PHY 3653	Contemporary Physics	3
PHY 3661	Contemporary Physics Lab	1

Electives (8 more credit hours) chosen from the following:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PHY 1213	Astronomy	3
PHY 1231	Astronomy Lab	1
PHY 3414	Analytical Mechanics	4
PHY 4724	Quantum Mechanics	4
PHY 4743	Optics, Lasers, & Microscopy	3
PHY 4781	Optics, Lasers, & Microscopy Lab	1
PHY 4763	Thermal Physics	3
PHY 4843	Condensed Matter Physics	3
PHY 4991/2/3	Directed Study in Physics	1/2/3
	TOTAL	20

# Lawrence Technological University

For more information, contact [nschair@ltu.edu](mailto:nschair@ltu.edu)

## MINOR IN PSYCHOLOGY

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
PSY 1213	Intro. to Psychology	3
MCS 4993	Biostatistics	3
MCS 4991	Calculus Lab	1
PSY 3113	Research Methods for the Behavioral Scientist	3
Four upper-division courses in psychology		12
	TOTAL	22

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

## MINOR IN SPANISH

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SPN 2913	Spanish 1	3
SPN 2923	Spanish 2	3
SPN 3833	Spanish 3	3
SPN 3843	Spanish 4	3
SPN 4XX3		3
	TOTAL	15

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

## MINOR IN TECHNICAL AND PROFESSIONAL COMMUNICATION

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
COM 2113	Speech	3
COM 3553 or COM 3563	Interpersonal and Nonverb. Comm. or Collaborative Communication for Leaders	3
Three additional Technical and Professional Communication electives at the 2000 level or higher		9
	TOTAL	18

For more information, contact [humchair@ltu.edu](mailto:humchair@ltu.edu)

## DUAL MAJORS

Dual majors are available in various combinations, including:  
Chemistry with Engineering or Physics  
Physics with Engineering or Chemistry  
Computer Science with Engineering or Chemistry  
Mathematics with Engineering  
Business Administration with Information Technology

## **Lawrence Technological University**

For further information about dual majors or minors, please see the individual major program descriptions or contact the advisor listed for the major program.

## **College of Engineering**

### **Dean**

Nabil Grace  
E98, 248.204.2500

### **Associate Dean**

Lewis Frasch  
E98, 248.204.2500

### **Associate Dean of Graduate Studies and Research**

Elin Jensen  
E98, 248.204.2500

### **ABOUT THE COLLEGE OF ENGINEERING**

Engineering is a profession in which principles of science, mathematics, and economics are applied, using the engineering method to cause changes which benefit society. Engineers endeavor to understand problems, design plans to solve problems, carry out these plans, and follow up to check the results obtained. Engineers must be both analytical and creative and must exercise leadership to accomplish goals. Because their actions can influence many lives, engineers must have a strong sense of ethics and an understanding of the society and environment in which they live.

Lawrence Technological University's College of Engineering places high priority on preparing students to enter the profession in industry, government, or private practice or to pursue advanced degrees. The curricula provide a strong background in the fundamentals of engineering, as well as more specialized topics, while emphasizing the core of knowledge and experience common to all the engineering disciplines. Program areas have been selected to provide students with the greatest flexibility and mobility in their career choices and to avoid overspecialization.

### **Mission**

We want our engineers to grow as leaders through innovative and agile programs embracing theory and practice. Our goal is to prepare our students to be outstanding professionals characterized by integrity, social responsibility, and a global perspective. We will position the College of Engineering as a haven for student learning and the application of knowledge.

### **Vision**

The College of Engineering will be positioned to be a leader in engineering education with regional recognition and national prominence.

Lawrence Tech's engineering, engineering technology and management programs include both theoretical and practical dimensions consistent with the University's motto, "theory and practice." The faculty consists of engineers and managers distinguished by both strong academic and professional credentials as well as significant industrial experience. Many engineering faculty are concurrently working within the industry, which ensures that the program reflects a strong real-world orientation. Lawrence Tech's undergraduate programs in civil, electrical, and mechanical engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone 410.347.7700.

# Lawrence Technological University

## DEGREE PROGRAMS

The college provides undergraduate degree programs in biomedical engineering, civil engineering, computer engineering, construction management, electrical engineering, engineering technology, industrial operations engineering, and mechanical engineering, and a combined bachelor's and master's degree in architectural engineering.

### **Bachelor of Science in Biomedical Engineering**

Lawrence Technological University's biomedical engineering program combines intensive course work in engineering with a strong background in biology, chemistry, physiology, and other subjects pertinent to the medical field. Its goal is to provide students with the skills needed for industry positions or graduate work in biomedical engineering. The program also provides excellent preparation for those who wish to go on to medical school or for working professionals who, for a variety of reasons, require expertise in biomedical engineering.

The Bachelor of Science in Biomedical Engineering (BSBME) degree requires a total of 132 credit hours.

#### *Educational Objectives*

In consultation with program constituencies, the Life Science Industrial Advisory Board, alumni, employers, and current students, the faculty established educational objectives for the biomedical engineering program. They are:

1. Graduates of the BSBME program apply foundational sciences and a wide range of engineering principles in order to lead cross-functional teams developing, designing, and verifying the function of medical technologies and services.
2. Graduates of the BSBME program conduct translational biomedical engineering research while adhering to government compliance requirements and regulatory protocols.
3. Graduates of the BSBME program demonstrate integrity and responsible ethical behavior in their research and profession.
4. Graduates of the BSBME program are contributing members of the profession and society, and stay informed of current research and professional developments through advanced graduate studies and lifelong education.

#### *Student Outcomes*

To enable graduates to achieve the accomplishments described by the aforementioned educational objectives, the program cultivates specific skills, knowledge, and behaviors. In particular, upon graduation, students must have obtained the following outcomes:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;

## Lawrence Technological University

- an understanding of professional ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to, engage in lifelong learning;
- a knowledge of contemporary issues;
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice;
- an understanding of biology and physiology, and the capability to apply advanced mathematics (including differential equations and statistics), science, and engineering to solve the problems at the interface of engineering and biology; and
- the ability to make measurements on and interpret data from living systems, addressing the problems associated with the interaction between living and non-living materials and systems.

### **Bachelor of Science in Civil Engineering**

The Department of Civil Engineering is committed to providing its students with the highest quality education, as demonstrated by its mission statement:

The Mission of the Department of Civil Engineering is to offer a program focusing on a broad, high-quality and contemporary educational experience in civil engineering, in parallel with Lawrence Technological University's guiding principle of "Leadership Through Theory and Practice."

Civil engineering has a long and distinguished history among the engineering disciplines. Although the term "civil engineer" may not have been used in ancient times, it was certainly civil engineers who designed and constructed the pyramids, the Roman aqueducts and the Great Wall of China. Today, civil engineers are involved in the design, construction and maintenance of the infrastructure that surrounds us as well as the clean-up and preservation of our natural and manmade environment. As our nation's infrastructure continues to age and deteriorate, and our environment becomes more vulnerable, civil engineers will be expected to create innovative methods to repair and replace the infrastructure and to preserve our environment for future generations. To accomplish this, civil engineers must combine a strong technical background in math and science with excellent communication skills to educate and interact with decision makers, the construction industry, and the general public.

Not only is civil engineering steeped in history and tradition, it is also one of the broadest and most diverse engineering disciplines. Civil engineering encompasses construction engineering and management, environmental engineering, geotechnical engineering, hydraulics and hydrological engineering, structural engineering, transportation engineering, and surveying/land measurement.

Employment opportunities for civil engineers exist at all levels of government and with a variety of consulting engineering firms, architectural and planning organizations, and in private practice. The demand for civil engineers will continue to be strong for the foreseeable future, as many new engineering tasks and responsibilities are assigned to a civil engineer.

The Department of Civil Engineering at Lawrence Technological University provides students with the necessary skills to immediately contribute to the improvement of the nation's infrastructure and environment and the overall quality of life. At the undergraduate level, students can earn a traditional



# Lawrence Technological University

bachelor's degree in civil engineering, with an option to earn a Certificate in Entrepreneurial Engineering or a dual degree in architecture and civil engineering.

The civil engineering program at Lawrence Tech is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

Striving to provide a state-of-the-art curriculum, the objectives of the department are to offer a program that:

- provides a strong foundation in mathematics, natural sciences, humanities and social sciences as a basis for developing into a well-rounded engineer;
- provides an essential understanding of the fundamental principles of engineering;
- develops the ability to identify and analyze problems with realistic constraints, devise and critique engineering alternatives, and formulate solutions both individually, as well as in a team environment;
- allows for the application of contemporary skills for the solution of civil engineering problems, as well as the application and integration of the project management process;
- develops effective communicators in engineering and business environments and encourages positive contributions to all levels of public policy decision-making;
- stresses professionalism, leadership and commitment to professional development through lifelong learning and licensure; and
- encourages community and professional service, and the need to act ethically in all matters.

Industry leaders have high expectations for graduating civil engineering students. The American Society of Civil Engineers created the *Civil Engineering Body of Knowledge, Second Edition*, which describes its vision for the skills and abilities the next generation of civil engineers must possess, by the year 2025, in order to be competent practitioners. The department adopted the *Body of Knowledge* outlined below as the basis for its program outcomes.

<b>Outcome Number and Title</b>	To graduate with a BS degree in Civil Engineering from Lawrence Technological University and enter the practice of civil engineering, an individual must demonstrate competence in each of 24 Program Outcomes.
<b>Foundational Outcomes</b>	
<b>1 Mathematics</b>	<b>Solve</b> problems in mathematics through differential equations and <b>apply</b> this knowledge to the solution of engineering problems.
<b>2 Natural Sciences</b>	<b>Solve</b> problems in calculus-based physics, chemistry, and geology and <b>apply</b> this knowledge to the solution of engineering problems.
<b>3 Humanities</b>	<b>Demonstrate</b> the importance of the humanities in the professional practice of engineering.
<b>4 Social Sciences</b>	<b>Demonstrate</b> the incorporation of social sciences knowledge into the professional practice of engineering.

Technical Outcomes	
5 Materials Science	<i>Use</i> knowledge of materials science to <i>solve</i> problems appropriate to civil engineering.
6 Mechanics	<i>Analyze</i> and solve problems in solid and fluid mechanics.
7 Experiments	<i>Specify</i> and <i>design</i> an experiment to meet a specified need; conduct the experiment, and analyze, interpret, and <i>explain</i> the resulting data.
8 Problem Recognition and Solving	<i>Develop</i> problem statements and solve both well-defined and open-ended civil engineering problems by <i>selecting</i> and applying appropriate techniques and tools.
9 Design	<i>Design</i> a system or process to meet desired needs within such realistic constraints as economic, environmental, social, political, ethical, health and safety, constructability, and sustainability.
10 Sustainability	<i>Apply</i> the principles of sustainability to the design of traditional and emergent engineering systems and <i>explain</i> how civil engineers should strive to comply with the principles of sustainable development in the performance of their professional duties.
11 Contemporary Issues and Historical Perspectives	<i>Explain</i> the impact of historical and contemporary issues on the identification and formulation of solutions to engineering problems and <i>explain</i> the impact of engineering solutions on the economy, environment, political landscape, and society.
12 Risk and Uncertainty	<i>Apply</i> the principles of probability and statistics and <i>solve</i> problems containing uncertainty.
13 Project Management	<i>Analyze</i> a proposed project and <i>formulate</i> documents for incorporation into the project management plan.
14 Breadth in Civil Engineering Areas	<i>Analyze</i> and <i>solve</i> well-defined engineering problems in at least four technical areas appropriate to civil engineering.
15 Technical Specialization	<i>Apply</i> specialized tools or technologies to <i>solve</i> problems in traditional or emerging specialized technical areas of civil engineering.
Professional Outcomes	
16 Communication	<i>Plan, compose, and integrate</i> the verbal, written, virtual, and graphical communication of a project to technical and non-technical audiences.
17 Public Policy	<i>Discuss</i> and <i>explain</i> key concepts and processes involved in public policy.
18 Business and Public Administration	<i>Explain</i> key concepts and processes used in business and public administration.

<b>19 Globalization</b>	<i>Explain</i> global issues related to professional practice, infrastructure, environment, and service populations as such issues arise across cultures and countries.
<b>20 Leadership</b>	<i>Explain</i> leadership principles and attitudes and <i>apply</i> those principles and attitudes when making decisions and directing the efforts of a small group.
<b>21 Teamwork</b>	<i>Function</i> effectively as a member of an intra-disciplinary team and <i>evaluate</i> the performance of the team and individual team members.
<b>22 Attitudes</b>	<i>Explain</i> attitudes supportive of the professional practice of civil engineering.
<b>23 Lifelong Learning</b>	<i>Demonstrate</i> the ability for self-directed learning and <i>identify</i> additional knowledge, skills, and attitudes appropriate for continued professional practice.
<b>24 Professional and Ethical Responsibility</b>	<i>Explain</i> the many aspects of professionalism and what it means to be a member of the civil engineering profession; <i>analyze</i> a situation involving multiple conflicting professional and ethical interests to determine an appropriate course of action.

At the graduate level, the Department of Civil Engineering offers a Master of Civil Engineering, a Master of Science in Civil Engineering, a Master of Construction Engineering Management, a Doctor of Philosophy in Civil Engineering, and a Graduate Certificate in Integrated Project Delivery.

**Bachelor of Science in Computer Engineering**

**Bachelor of Science in Electrical Engineering**

Two degrees are offered in the Department of Electrical and Computer Engineering, a Bachelor of Science in Electrical Engineering and a Bachelor of Science in Computer Engineering. The decision as to which degree to pursue should be based on a careful consideration of the student’s goals and objectives. Faculty are eager to discuss this and other issues with students. All students should see their academic advisor at least once per semester. A list of advisors can be obtained from the Electrical and Computer Engineering Department office, Room E217.

The electrical and computer engineering program integrates the design experience throughout its curriculum. This process starts with the freshman-level courses, Introduction to Engineering and Engineering Computer Applications Lab. The design experience continues through the sophomore, junior, and senior years, using open-ended design exercises to emphasize basic design principles. This process culminates in a two-semester senior design project in which design skills, analysis techniques, teamwork, and oral and written communication skills all come together in a unified culminating design experience.

*Bachelor of Science in Computer Engineering*

The world is in the midst of a technological revolution that is being fueled by continuous improvements in the speed and capabilities of computers. Computer engineers are concerned with the design, development, and implementation of new and challenging computer technologies in a myriad of consumer, industrial, commercial, and military applications. For example, every major automotive subsystem (engine, traction, brakes, suspension, climate control, instrument cluster, etc.) on a modern automobile is computer controlled. Working in these areas requires expertise in all aspects of computer

## Lawrence Technological University

hardware and software and requires the engineer to be able to make hardware/software tradeoffs in developing an optimum system design.

The Bachelor of Science in Computer Engineering program at Lawrence Tech is specifically designed with these goals in mind – to give graduating computer engineers the skills necessary to be proficient in both hardware design and computer programming and to be able to integrate these two areas into a single computer-oriented design.

Students receive a strong background in the principles of electrical engineering from the Department of Electrical and Computer Engineering and in those of computer science from the Department of Mathematics and Computer Science. Several courses specifically deal with the challenge of incorporating both hardware and programming designs into a single integrated product design. The program includes a core of electrical engineering and computer science courses, plus one math/science elective, two electrical engineering electives, and two computer science electives. A list of acceptable elective courses can be obtained from the Department of Electrical and Computer Engineering office, Room E217.

The computer engineering program at Lawrence Tech is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

According to ABET, “program educational objectives are broad statements which describe the career and professional accomplishments that the program is preparing graduates to achieve.” The Lawrence Tech Computer Engineering program’s educational objectives, formulated by the faculty in consultation with the ECE Industrial Advisory Board and other important program constituencies, are listed below.

### *Educational Objectives*

To graduate computer engineering students who

1. possess the problem-solving and critical judgment skills required of competent citizens in an increasingly technological society;
2. are able to undertake entry-level engineering projects in local industry;
3. are capable of growing in competence and responsibility; and
4. are prepared to undertake graduate study.

According to ABET, “program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program.” The outcomes formulated for the Lawrence Tech Computer Engineering program (revised Fall 2007) are as follows.

### *Educational Outcomes*

All computer engineering graduates must have

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a computer system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve computer engineering problems;

## Lawrence Technological University

- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues;
- an ability to use the techniques, skills, and modern engineering tools necessary for computer engineering practice;
- an ability to plan, design, simulate, fabricate, construct, and test circuit hardware; and
- an ability to plan, design, test, and debug systems consisting of both software and hardware.

### *Bachelor of Science in Electrical Engineering*

Electrical engineers apply electrical, electronic, and magnetic theory to obtain solutions for problems related to the development, design, and operation of electronic and electrical hardware and software, control systems, electrical machines, and communications systems. Besides development, design, operations, and research, electrical engineers may be involved in the manufacture, installation, and sale of electrical and electronic equipment; they are employed by a wide variety of organizations which produce, use, or service this equipment.

The Electrical Engineering program at Lawrence Tech is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

According to ABET, “program educational objectives are broad statements which describe the career and professional accomplishments that the program is preparing graduates to achieve.” The Lawrence Tech Electrical Engineering program’s educational objectives, formulated by the faculty in consultation with the ECE Industrial Advisory Board and other important program constituencies, are listed below.

### *Educational Objectives*

To graduate Electrical Engineering students who

1. possess the problem-solving and critical judgment skills required of competent citizens in an increasingly technological society;
2. are able to undertake entry-level engineering projects in local industry;
3. are capable of growing in competence and responsibility;
4. are prepared to undertake graduate study.

According to ABET, “program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program.” The educational outcomes formulated for the Lawrence Tech Electrical Engineering program (revised Fall 2007) are as follows.

### *Educational Outcomes*

All Electrical Engineering graduates must have

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;

## Lawrence Technological University

- an ability to design an electrical system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve electrical engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues;
- an ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice; and
- an ability to plan, design, simulate, fabricate, construct, and test circuit hardware.

### **Bachelor of Science in Industrial Operations Engineering**

The mission of the Bachelor of Science in Industrial Operations Engineering program is to prepare individuals for careers in industrial and operations engineering, to provide industry and the profession with well-educated graduates and to generate solutions to industrial problems through applied research.

The department's vision is to be the institution of choice for industrial engineering education because of an accessible and effective program focused on industry needs and the development of strong professional relationships among students, faculty, and alumni.

#### *Educational Objectives*

The program education objectives of the Industrial Operations Engineering program in are to:

- produce graduates capable of applying fundamental science, math, and engineering principles, in conjunction with modern technology, in an interdisciplinary engineering work environment;
- produce graduates who are competent to pursue advanced degrees in engineering;
- produce graduates capable of working in global technical locations as well as in the automotive-related industries of Southeast Michigan;
- produce graduates capable of working in teams, utilizing ethical judgment with strong communication and leadership skills; and
- produce graduates capable of understanding contemporary global engineering issues and recognizing the importance of lifelong learning.

Industrial engineers apply their knowledge of machine, human, and financial interaction to solve problems related to the global engineering infrastructure. Industrial engineering knowledge can be applied to diverse areas such as manufacturing, insurance, health care, banking and finance, and computer networks.

### **Bachelor of Science in Mechanical Engineering**

The mission of the Department of Mechanical Engineering is to prepare students to be leaders in mechanical engineering careers, capable of producing innovative solutions.

The vision of the Department of Mechanical Engineering is to be the institution of choice for mechanical engineering education, encompassing technical leadership, innovation, and service.

# Lawrence Technological University

The Mechanical Engineering program at Lawrence Tech is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. An ABET-accredited program must define and consistently work toward a full set of objectives and outcomes.

## *Educational Objectives*

The educational objectives of the Mechanical Engineering program are as follows:

1. To educate mechanical engineers who are capable of solving multidisciplinary technical problems in a global work environment.
2. To produce professionals who apply ethical judgment and use effective communication skills to implement engineering solutions.
3. To produce individuals who contribute to contemporary engineering solutions with community involvement and aspire to lifelong learning.

Mechanical engineers apply their knowledge of the physical world to solve problems related to the development of consumer products. Their interests cover such diverse topics as automotive engineering, acoustics, machine design, heating and air conditioning, manufacturing engineering, fluids and hydraulics, stress analysis, computer-aided design/engineering, and energy and power production, among many others.

Mechanical engineering is a very versatile degree; graduates may work in such areas as design, analysis, testing, manufacturing, technical sales, and engineering management. Mechanical engineers are employed by a full spectrum of organizations including manufacturers, aerospace, biomedical, government, consulting firms, and research and development organizations.

All mechanical engineering students study the same core curriculum, which includes courses in three broad technical areas: manufacturing, mechanical systems, and thermal science. Manufacturing courses cover how products are made. Mechanical systems courses cover the study of mechanisms and structures. Thermal science courses cover heat transfer, fluid mechanics, and energy conversion. Since many new consumer products are electro-mechanical in nature, the core curriculum also includes an introductory course in mechatronics engineering.

As seniors, mechanical engineering students are required to take four technical electives. These technical elective courses can be chosen from the following areas: manufacturing, solid mechanics, thermal-fluids, automotive, and alternative energy. Students may concentrate in a particular area by taking at least three of their four elective courses from one of the above areas. A list of acceptable elective courses in each area is available from the Mechanical Engineering office or at the department website. Undergraduate students can also pursue minors in aeronautical engineering and energy engineering.

The Mechanical Engineering program integrates the design experience throughout its curriculum. Student design experience starts with the freshman-level Introduction to Engineering and Engineering Computer Applications Lab, and it continues to the capstone senior projects courses, Projects 1 and Projects 2. In lower-level courses, primarily open-ended design exercises are utilized to teach various aspects of design. Senior projects provide an extensive, structured design experience with a strong emphasis on teamwork and oral and written communications.

## *Educational Outcomes*

The student outcomes for the Mechanical Engineering program at Lawrence Technological University are:

- an ability to apply knowledge of mathematics, science, and engineering;

## Lawrence Technological University

- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues; and
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Lawrence Tech also offers graduate programs through the Department of Mechanical Engineering: Master of Science in Automotive Engineering, Master of Science in Industrial Engineering, Master of Engineering in Manufacturing Systems, Master of Science in Mechanical Engineering, Master of Engineering Management, Master of Science in Mechatronic Systems Engineering, Doctor of Engineering in Manufacturing Systems, and Doctor of Engineering in Mechanical Engineering. These programs are described in the *Graduate Catalog*.

### **Bachelor of Science in Robotics Engineering**

The mission of the Bachelor of Science in Robotics Engineering program is to prepare individuals to design and maintain robots, develop new applications for robots and provide industry with well-educated graduates capable of generating solutions to industrial robotics problems.

The department's vision is to be the institution of choice for robotics engineering education because of an accessible and effective program focused on industry needs and the development of strong professional relationships among students, faculty, and alumni.

#### *Educational Outcomes*

The student outcomes for the Robotics Engineering program at Lawrence Technological University are:

- an ability to apply knowledge of mathematics, science, and engineering;
- an ability to design and conduct experiments, as well as to analyze and interpret data;
- an ability to design a robotic system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
- an ability to function on multidisciplinary teams;
- an ability to identify, formulate, and solve engineering problems;
- an understanding of professional and ethical responsibility;
- an ability to communicate effectively;
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
- a recognition of the need for, and an ability to engage in, lifelong learning;
- a knowledge of contemporary issues; and



## Lawrence Technological University

- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Students in the robotics engineering program will be exposed to various types of robots, such as industrial robots which are typically designed to perform a routine task with little or no human interaction. Service robots (or personal robots) are another type of robot which are designed to work and perform activities for its user and are therefore designed to have significant human interaction. Robotics engineers can apply their engineering skills and knowledge of robots to a variety of applications in numerous industries including agriculture, aeronautical, aerospace, automotive, chemical, defense, energy, food and beverage, pharmaceutical, and medical.

### **Master of Science in Architectural Engineering (Combined Bachelor's and Master's Programs)**

Lawrence Technological University's Architectural Engineering program is an intensive, robust degree that offers course work in math and science and architectural design, as well as a commitment to educate students with the excellent communication, leadership, and entrepreneurial skills they need to become highly sought-after contributors to the built environment.

The Master of Science in Architectural Engineering requires a total of 164 credit hours, which includes undergraduate courses, graduate courses, and 88 credit hours of core courses. Students can choose one of several concentrations for their advanced course work: mechanical systems, electrical systems, structural systems, or construction.

For additional information on the Master of Science in Architectural Engineering program's educational objectives, outcomes, and curriculum details, refer to the Lawrence Tech's *Graduate Catalog*.

#### *Architectural Engineering Advisor/Director*

All students should have an advisor/director-approved Plan of Work. Contact Filza Walters, director of architectural engineering, at 248.204.2620 or [fwalters@ltu.edu](mailto:fwalters@ltu.edu), to set up an appointment. Students wishing to specialize in an area of emphasis can obtain a list of eligible elective courses from the director of architectural engineering.

### **FE EXAM**

Candidates for degrees in civil, electrical, or mechanical engineering are strongly encouraged to complete the Fundamentals of Engineering (FE) Examination administered by the National Council of Engineering Examiners.

### **ENGINEERING TECHNOLOGY**

Engineering Technology in the College of Engineering offers degrees for a rewarding career in technology and engineering activities as well as business and industry.

Working with engineers and scientists, engineering technologists are employed in a wide variety of industry, business and government organizations involved in manufacturing, development, design and testing, computer applications, electronics, construction, regulation, quality control, maintenance, and sales, to name just a few examples.

## **Lawrence Technological University**

Students may choose to first earn an associate degree, followed by a Bachelor of Science degree in engineering technology, or some other major. Students interested in alternatives should consult the department chairs of each program involved to determine an appropriate course plan.

### **Associate of Science in Communications Engineering Technology**

From electronics to entertainment, a degree in communications engineering technology can provide a strong foundation for a wide variety of careers. Focused on topics such as electrical control systems, electronics, circuits, microprocessors, networking, and computer diagnostics, Lawrence Tech's Associate of Science in Communications Engineering Technology program is designed to prepare students for entry-level positions such as electrical and electronic engineering technician, technical consultant, telecommunications network technician, or sales/services representative. Other opportunities exist in research and development, product evaluation and testing, and in broadcasting, especially industrial television. In addition, credits from the AS in Communications Engineering Technology may be applied to the Bachelor of Science in Engineering Technology or the Bachelor of Science in Audio Engineering.

### **Associate of Science in Construction Engineering Technology**

The Associate of Science in Construction Engineering Technology can lead to a myriad of rewarding career paths. Construction firms, supply manufacturers, departments of transportation, and even the oil industry need qualified professionals to assist with the design, development, and management of construction processes. A cross-disciplinary program, the AS in Construction Engineering Technology provides a strong technical foundation combined with business management skills. Students are exposed to construction practices, planning, estimating, surveying, computer applications, and project management. The AS in Construction Engineering Technology can prepare students for a variety of positions, including contractor, estimator, supervisor, project manager, or sales representative. Credits from the program transfer to the Bachelor of Science in Construction Management or the Bachelor of Science in Engineering Technology.

### **Associate of Science in Manufacturing Engineering Technology**

Designed to prepare students for technician-level positions in the manufacturing industry, the Associate of Science in Manufacturing Engineering Technology focuses on various manufacturing processes, the use and testing of materials, production methods, quality control, and the fundamentals of project management. Graduates may find employment in production, design, research and development, project management, quality control, or technical sales. Credits from the AS in Manufacturing Engineering Technology can be applied toward the Bachelor of Science in Engineering Technology.

### **Associate of Science in Mechanical Engineering Technology**

Mechanical engineering technicians play a crucial role in business and industry by assisting engineers with a wide variety of tasks. Technicians may be involved in the design, development, testing, or manufacturing of products, equipment, or machinery. Some perform experiments, collect and analyze data, or work with engineers to troubleshoot production problems. Others may branch into technical sales. The Associate of Science in Mechanical Engineering Technology is designed to provide students with an understanding of advanced technologies relating to mechanical engineering, including thermo and fluid mechanics, statics, dynamics, and computer graphics. Credits from the AS in Mechanical Engineering Technology can be applied to the Bachelor of Science in Engineering Technology.

### **Bachelor of Science in Audio Engineering Technology**

The Bachelor of Science in Audio Engineering Technology prepares students for careers in the application of audio technology. Graduates are expected to be competent in audio technology and related disciplines

## Lawrence Technological University

and demonstrate expertise in one or more of the following: analog audio systems, digital audio systems, audio mixing and production, sound cancelation and noise reduction techniques, and other audio applications. Graduates find employment with broadcast networks, multimedia firms, automotive companies, and in the arts and entertainment industry using modern technology in the recording, processing, and creation of sound.

The Bachelor of Science in Audio Engineering Technology stresses the fundamentals of electronics, music theory, and sound technology using modern filter techniques, digital compression, and sound spectrum analysis. Overall, the program covers three disciplines: electronics, acoustics, and the musical principles of sound, including tuning and pitch. Students may elect additional courses in radio, television, and management for additional expertise.

The curriculum encompasses the fundamentals of digital audio technologies, enabling the students to conduct experiments on digital audio workstations. Students are exposed to musical instrument digital interface applications; sound mixing techniques using different recording media hardware; advanced recording using digital and analog routing and storage technologies; and the adaptation of classical vacuum tube design and applications. Also included are the latest in audio transmission hardware, fiber, and wireless technologies; microprocessor-based techniques in Class C amplifier design; and the synthesis of audio sound technology using digital signal processors and digital filters in a laboratory environment.

### **Bachelor of Science in Construction Management**

Construction managers play a crucial role in the overall building process. Whether they work for companies or as independent consultants, construction managers plan, direct, and coordinate a wide variety of projects, including the building of all types of residential, commercial, and industrial structures; roads; bridges; wastewater treatment plants; schools; and hospitals. They are responsible for overseeing the entire project, which includes scheduling and coordinating all design and construction processes, as well as the selection, hiring, and supervision of specialty trade contractors.

Designed for working professionals with experience in the construction industry and those interested in entering the field, the Bachelor of Science in Construction Management program at Lawrence Technological University was developed with input from the Associated General Contractors. This practical program is set up for full- and part-time students and consists of a well-rounded core of management classes along with a strong concentration in construction science and construction engineering. The program exceeds the requirements set by the American Council for Construction Education. Small class sizes and the ability to choose from a collection of focused electives make this program highly responsive to students' individual needs.

### **Bachelor of Science in Engineering Technology**

The mission of the Department of Engineering Technology is to offer a broad, high quality, contemporary, baccalaureate education in engineering technology disciplines, with the guiding university principle of "theory and practice." The objective is to provide students with a strong understanding of the fundamental principles and practical application of engineering technology. Students will be prepared to:

- Identify the problem, formulate and analyze engineering alternatives, and solve the problem individually as well as in a team environment;
- Assume management and leadership roles in the technology industry;
- Communicate effectively in a professional engineering environment; and

## Lawrence Technological University

- Understand the aspects of professionalism, including the need for career development through lifelong learning.

### ***Educational Outcomes***

The educational outcomes of the Department of Engineering Technology at Lawrence Technological University are to produce graduates with the ability to:

- apply the knowledge, techniques, skills, and modern tools of their disciplines;
- apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology;
- conduct, analyze, and interpret experiments and apply experimental results to improve processes;
- apply creativity in the design of systems, components, or processes appropriate to each project's objectives;
- function effectively on teams, making decisions, reaching consensus, and resolving conflicts;
- identify, analyze and solve technical problems;
- communicate effectively;
- understand the need for, and an ability to engage, in lifelong learning;
- understand professional, ethical, and social responsibilities and contribute to their communities and to society;
- respect diversity and a knowledge of contemporary professional, societal, and global issues;
- commit to quality, timeliness, and continuous improvement; and
- be aware of the foundations and development of American society.

Engineering technologists often work with engineers and scientists, especially in research and product development, building or setting up equipment, preparing and conducting experiments, analyzing results, or making prototype versions of newly designed products or equipment. Others work in quality control – inspecting products and processes, performing tests, and collecting data. In manufacturing, they may assist in product design, development, or production. In many cases, it is the technologist who takes ideas and turns them into reality.

The Bachelor of Science in Engineering Technology program is designed both for individuals who already hold an associate degree in engineering technology from other institutions and for those who are concurrently completing their associate degree at Lawrence Technological University. Students can attend full-time or part-time and choose from four areas of specialization: communications engineering technology, construction engineering technology, manufacturing engineering technology, and mechanical engineering technology. All technical courses are taught on weekday evenings, with other courses available during the day.

### **GREENFIELD COALITION**

The Greenfield Coalition for New Manufacturing Education has developed an innovative college-level manufacturing engineering curriculum, integrating experiential learning in the degree program. The curriculum offers an Associate of Science in Manufacturing Engineering/Technology and the ability to transfer to the Bachelor of Science in Engineering Technology program. The Coalition consists of the Society of Manufacturing Engineers and Focus: HOPE as well as five major universities:

Lawrence Technological University  
Lehigh University  
University of Detroit Mercy

# Lawrence Technological University

University of Michigan  
Wayne State University  
and six corporate partners:  
Chrysler  
Cincinnati Machine Corp  
Detroit Diesel  
EDS  
Ford Motor Company  
General Motors Corporation

## **Associate of Science in Manufacturing Engineering/Technology**

The Associate of Science in Manufacturing Engineering/Technology degree is awarded by Lawrence Tech. The program is unique in its design and all academic work is done at the Center for Advanced Technologies at Focus: HOPE. The Center contains a state-of-the-art manufacturing facility and is recognized as an extension campus of Lawrence Tech.

The degree candidates are accepted into the program after completion of 52 weeks at the Machinist Training Institute, where they receive training in precision machining and metalworking along with other academic skills to better prepare them for college-level education. At the Center, candidates work 40 hours per week at various manufacturing job rotations while taking electronically delivered college-level courses with the assistance of faculty coaches and on-site tutors. The integrated engineering experience provides an education for advanced manufacturing engineer-technologists at world-competitive levels.

Further information on admission to this special program is available through the Greenfield Coalition Program Director, Sabah Abro, 248.204.2069, or visit the Engineering Technology office in Room E179.

## **LEAR ENTREPRENEURIAL ENGINEERING PROGRAM**

The Lear Entrepreneurial Engineering Program at Lawrence Technological University offers students from various disciplines the opportunity to work in a business-model setting to solve real-world engineering problems. Students enrolled in this program can earn a certificate in entrepreneurial skills while pursuing an engineering degree with no additional semester credit hour requirement. Within the College of Engineering, the Certificate in Entrepreneurial Engineering is offered in the Departments of Mechanical Engineering and Civil Engineering.

The entrepreneurial program addresses entrepreneurial management in start-up ventures and new business development in existing companies. The program provides a vehicle for sharpening skills in business process and teamwork as well as industry-specific technical skills. Gaining these skills is desirable for students intending to start their own companies, work in small businesses, or initiate jobs in larger companies.

The certificate program consists of courses, conferences, internships and student-run enterprises, which are designed to provide entrepreneurship education in which inquiry, creativity, and innovation are the norm, and theory and practice go hand-in-hand.

## **COOPERATIVE EDUCATION**

A co-op program is offered for qualified students in various majors who are in good academic standing. A minimum cumulative GPA of 2.25 is required. Transfer students must have completed at least one semester at Lawrence Tech prior to the first work assignment.

# Lawrence Technological University

Co-op students alternate between periods of study in school and periods of employment in industry. Both types of learning experiences are planned and supervised to contribute to the students' education and employability.

The work assignment provided by the employer is approved by the co-op director in association with an engineering faculty member. Co-op companies are expected to provide workplace experience related to the student's major.

Co-op students are paid by their employers. Interested students can obtain complete information, including limitations and requirements, by contacting the office of Career Services.

Co-op placement depends on the availability of appropriate jobs in industry. The employer makes the final selection of candidates. Consequently, Lawrence Tech cannot guarantee that applicants, otherwise qualified, will be placed in a co-op position.

## BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING

TOTAL SEMESTER CREDIT HOURS: 132

Students seeking the Bachelor of Science in Biomedical Engineering degree must complete all courses in the core curriculum. This includes six (6) approved technical elective credits and six (6) BME elective credits.

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
BIO 1213	Biology 1	3
BIO 1221	Biology 1 Lab	1
MCS 1414	Calculus 1	4
BME 1202	Engr. Computer Applications Lab	2
EGE 1001	Fund. of Engr. Design Projects	1
	TOTAL	15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
BME 1002	Intro. to Biomedical Engr.	2
BME 1201	Computer Graphics Lab	1
	TOTAL	17

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
LDR 2001	Leadership Models & Practices	1

# Lawrence Technological University

MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
BME 2103	Biochemistry for Engineers	3
BME 2101	Biochemistry for Engineers Lab	1
		TOTAL 16

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
BME 2203	Anatomy & Physiology	3
BME 2201	Anatomy & Physiology Lab	1
EGE 2013	Statics	3
		TOTAL 17

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
COM 3000	Writing Proficiency Exam	0
MCS 3403	Probability and Statistics	3
EEE 2123	Circuits & Electronics	3
BME 3303	Intro. to Biomechanics	3
BME 3301	Biomechanics Lab	1
BME 3213	Biomaterials	3
		TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2303	Principles of Economics	3
LDR 3000	Leadership Seminar Series	0
EGE 3012	Engineering Cost Analysis	2
BME 3002	Biomedical Best Practices	2 <sup>†</sup>
BME 3103	Bioinstrumentation	3
BME 3101	Bioinstrumentation Lab	1
BME 3703	Biotransport	3
	Technical Elective	3
		TOTAL 17

# Lawrence Technological University

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT/SSC/ PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Seminar Series	0
BME 4XX3	Elective	3
BME 4013	BME Projects 1	3 <sup>#</sup>
BME 4103	Foundations of Medical Imaging	3
BME 4803	Tissue Engineering	3
BME 4801	Tissue Engineering Lab	1
	Technical Elective	3
	TOTAL	19

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
BME 4XX3	Elective	3
BME 4022	BME Projects 2	2 <sup>##</sup>
BME 4313	Tissue Mechanics	3
BME 4203	Intro. to MEMS	3
BME 4201	Intro. to MEMS Lab	1
BME 4113	Medical Device Design	3
	TOTAL	15

† Sophomore standing required

# Senior standing required and minimum of 12 credits from BME 3XXX courses

## Must be enrolled/have completed all BME 3XXX courses

A list of eligible technical elective courses is available from the Biomedical Engineering Program.

Dual majors will be permitted a number of substitutions as approved by the program director consistent with accreditation requirements.

### *Biomedical Engineering Advisors*

All students should have an advisor-approved Plan of Work. Students should contact the Biomedical Engineering Program, 248.204.2600, Room E98, for their assigned faculty advisor.

## BACHELOR OF SCIENCE IN CIVIL ENGINEERING

TOTAL SEMESTER CREDIT HOURS: 132

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
ECE 1101	CE Computer Graphics Lab	1
ECE 1102	CE Computer Applications Lab 2	2
MCS 1414	Calculus 1	4



# Lawrence Technological University

GLG 1103	Geology	3
ECE 1011	Civil Engineering Perspectives	1
EGE 1001	Fund. of Engr. Design Projects	1
		TOTAL 16

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 1424	Calculus 2	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
ECE 1413	Civil Engineering Materials	3
		TOTAL 17

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LLT 1223	World Masterpieces 2	3
ECE 1013	Surveying & Land Measurement	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EGE 2013	Statics	3
ECE 2103	CAD Infrastructure Planning	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
SSC 2423	Development of Amer. Exp.	3
LDR 2001	Leadership Models & Practices	1
		TOTAL 17

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2303	Basic Economics	3
MCS 3403	Probability & Statistics	3
ECE 3523	Hydromechanics	3
EGE 3012	Engineering Cost Analysis	2
ECE 3013	Mechanics of Materials	3
LDR 3000	Leadership Seminar Series	0
	Engr. Science Elective *	3
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ECE 3213	Construction Engineering	3

# Lawrence Technological University

ECE 3324	Environmental Engineering 1	4
ECE 3424	Soil Mechanics	4
ECE 3723	Theory of Structures	3
ECE 3823	Transportation Engineering	3
COM 3000	Writing Proficiency Exam	0
		TOTAL 17

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ECE 4022	CE Design Project 1	2
ECE 4051	Ethics & Professional Issues	1
ECE 4544	Hydraulic Engineering	4
ECE 4743	Concrete Design	3
LDR 4000	Leadership Capstone	0
	Civil Engineering Electives**	6
		TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ECE 4032	CE Design Project 2	2
ECE 4761	Structural Design/Testing Lab	1
LLT/SSC 3XX3/4XX3	Junior/Senior Elective	3
ECE42X3	CE Management Practices	3
	Civil Engineering Electives**	6
		TOTAL 15

## CERTIFICATE IN ENTREPRENEURIAL SKILLS

TOTAL SEMESTER CREDIT HOURS: 133

Students wishing to fulfill the requirements for the Certificate in Entrepreneurial Engineering should pursue the curriculum outlined above for their freshman year, then proceed as follows:

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LLT 1223	World Masterpieces 2	3
ECE 1013	Surveying & Land Measurement	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
EGE 3012	Engineering Cost Analysis	2
		TOTAL 19

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EGE 2013	Statics	3
SSC 2423	Development of Amer. Exp.	3
MCS 2423	Differential Equations	3

# Lawrence Technological University

PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
LDR 2001	Leadership Models & Practices	1
		<b>TOTAL 14</b>

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2303	Basic Economics	3
MCS 3403	Probability & Statistics	3
ECE 3523	Hydromechanics	3
ECE 3013	Mechanics of Materials	3
	Engineering Science Elective*	3
EGE 2233	Entrepreneurial Mindset for Engr.	3
		<b>TOTAL 18</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ECE 3213	Construction Engineering	3
ECE 3324	Environ. Engineering 1	4
ECE 3424	Soil Mechanics	4
ECE 3723	Theory of Structures	3
ECE 3823	Transportation Engineering	3
EGE 3361	Business Plan. Dev.	1
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar Series	0
		<b>TOTAL 18</b>

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ECE 4022	CE Design Project 1	2
ECE 4051	Ethics & Prof. Issues	1
ECE 4544	Hydraulic Engineering	4
ECE 4743	Concrete Design	3
	Civil Engineering Electives**	6
		<b>TOTAL 16</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ECE 4032	CE Design Project 2	2
ECE 4761	Structural Design/Testing Lab	1
LLT/SSC 3XX3/4XX3	Junior/Senior Elective	3
ECE 4243	CE Management Practices	3
LDR 4000	Leadership Capstone	0
	Civil Engineering Electives**	6
		<b>TOTAL 15</b>

# Lawrence Technological University

\*Engineering Science Elective (3 credits)

One course to be selected from the following:

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EGE 3003	Thermodynamics	3
EGE 3043	Dynamics	3
EME 4613	Intro. to Thermal Sys. (non-ME)	3

\*\*Civil Engineering Technical Electives (12 credits)

A total of 12 technical elective credits to be chosen from the following list of courses so that the total number of Design Credits\*\*\* equals or exceeds seven (7):

<i>Course Number</i>	<i>Subject</i>	<i>Design Credits***</i>
ECE 4011	Design for CE Competition 1	0
ECE 4012	Design for CE Competition 2	0
ECE 4263	Cost Estimating, Bidding & Contracting	0
ECE 4343	Environmental Engineering 2	1
ECE 4563	Hydrology	1
ECE 4733	Advanced Structural Analysis	1
ECE 4363	Environmental Design	3
ECE 4443	Foundation Engineering	3
ECE 4753	Steel Design	3
ECE 4843	Highway Engineering	3

Up to six (6) credits of civil engineering graduate-level courses may also be used to fulfill technical electives subject to approval by the department.

See your academic advisor for elective requirements and further specific information on your degree program.

Dual majors will be permitted a number of substitutions as approved by the department chair consistent with accreditation requirements.

## *Civil Engineering Advisors*

All students should have an advisor-approved Plan of Work. Students should contact the Department of Civil Engineering, 248.204.2545, Room E023, for their assigned faculty advisor.

## **BACHELOR OF SCIENCE IN COMPUTER ENGINEERING**

TOTAL SEMESTER CREDIT HOURS: 133

### **Freshman Year**

#### **FIRST SEMESTER**

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
SSC 2303	Principles of Economics	3

# Lawrence Technological University

MCS 1414	Calculus 1	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1
		TOTAL 16

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
COM 2103	Technical & Prof. Communication	3
MCS 1424	Calculus 2	4
MCS 1514	Computer Science 1	4
EGE 1102	Engr. Computer Applications Lab	2
EEE 1001	Intro. to ECE	1
		TOTAL 17

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
SSC 2413	Foundations of Amer. Exp.	3
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
MCS 2514	Computer Science 2	4
LDR 2001	Leadership Models & Practices	1
		TOTAL 19

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2423	Differential Equations	3
MCS 2523	Discrete Math	4
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EEE 2114	Circuits	4
EEE 2111	Circuits Lab	1
EGE 3012	Engineering Cost Analysis	2
		TOTAL 18

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2534	Data Structures	4
MCS 3403	Probability & Statistics	3
SSC 2423	Development of Amer. Exp.	3
EEE 3124	Signals & Systems	4
EEE 2214	Digital Electronics and Lab	4
COM 3000	Writing Proficiency Exam	0
LDR 3000	Leadership Seminar	0
		TOTAL 18

# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 4623	Software Engineering	3
EEE 3233	Microprocessors	3
EEE 3231	Microprocessors Lab	1
EEE 3314	Electronics	4
EEE 3311	Electronics Lab	1
EEE 3223	Adv. Digital Electronics	3
EEE 3221	Adv. Digital Electronics Lab	1
EGE 2231	Project Management	1
	TOTAL	17

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 4243	Embedded Systems	3
EEE 4514	Control Systems and Lab	4
EGE 3361	Business Plans	1
EEE 3011	Intro. to ECE Projects	1
EEE 4831	Computer Engr. Projects 1	1
EEE 4253	Computer Architecture 1	3
LDR 4000	Leadership Capstone	0
	TOTAL	13

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 4xx3*	EE Technical Elective*	3
EEE 4xx1	EE Lab	1
EEE 4842	Computer Engr. Projects 2	2
MCS XXX3**	Comp. Science Technical Elective**	3
EEE 4273	Real Time Systems	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	15

\* A list of electrical engineering technical electives is available from the Department of Electrical and Computer Engineering, Room E217.

\*\* A list of approved computer science and computer engineering technical electives is available from the Department of Electrical and Computer Engineering, Room E217.

Dual majors will be permitted a number of substitutions as approved by the department chair consistent with accreditation requirements.

### *Electrical and Computer Engineering Advisors*

All students should have an advisor-approved Plan of Work. Students should contact the Department of Electrical and Computer Engineering, Room E217, for their assigned faculty advisor.

# Lawrence Technological University

## BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

TOTAL SEMESTER CREDIT HOURS: 132

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1142	Intro. to C	2
MCS 1414	Calculus 1	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1

TOTAL 15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
COM 2103	Technical & Prof. Communication	3
MCS 1424	Calculus 2	4
SSC 2303	Principles of Economics	3
EGE 1102	Engr. Computer Applications Lab	2
EEE 1001	Intro. to ECE	1

TOTAL 16

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
EEE 2214	Digital Electronics and Lab	4
LDR 2001	Leadership Models & Practices	1

TOTAL 19

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
SSC 2423	Development of Amer. Exp.	3
EME 4603	Intro. to Mechanical Systems	3
EEE 2114	Circuits	4
EEE 2111	Circuits Lab	1

TOTAL 18

# Lawrence Technological University

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3403	Probability & Statistics	3
MCS 3413	Adv. Engineering Math	3
EEE 3233	Microprocessors	3
EEE 3231	Microprocessors Lab	1
EME 4613	Intro. to Thermal Systems	3
EEE 3124	Signals & Systems	4
EEE 3121	Signals & Systems Lab	1
COM 3000	Writing Proficiency Exam	0
		TOTAL 18

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EGE 3012	Engr. Cost Analysis	2
EEE 3314	Electronics	4
EEE 3311	Electronics Lab	1
EEE 3414	Electromagnetic Fields	4
EEE XXX3	Concentration Course #1*	3
EGE 2231	Project Management	1
LDR 3000	Leadership Seminar	0
		TOTAL 15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 3422	Adv. Computer Applications Lab	2
EEE 4514	Control Systems and Lab	4
EEE XXX1	EE Lab	1
EEE 3011	Intro. to ECE Projects	1
EEE 4811	EE Projects 1	1
EEE 4XX3	Concentration Course #2*	3
EEE 4XX3	EE Technical Elective	3
EGE 3361	Business Plans	1
LDR 4000	Leadership Capstone	0
		TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 4423	Communication Systems	3
EEE 4XX3	Concentration Course #3*	3
EEE 4XX3	EE Technical Elective	3
EEE 4822	EE Projects 2	2
EEE 4XX1	EE Lab	1
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
		TOTAL 15



# Lawrence Technological University

Labs are required with a number of concentration and Technical Elective courses; these can be used to satisfy the general EE lab requirements. A list of Technical Elective courses is available from the Electrical and Computer Engineering Department, Room E217.

\*\*A list of eligible courses is available from the Department of Electrical and Computer Engineering.

Dual majors will be permitted a number of substitutions as approved by the department chair consistent with accreditation requirements.

## *Electrical and Computer Engineering Advisors*

All students should have an advisor-approved Plan of Work. Students should contact the Department of Electrical and Computer Engineering, Room E217, for their assigned faculty advisor.

### **CERTIFICATE IN ELECTRICAL POWER SYSTEMS**

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 3513	Introduction to Electrical Systems	3
EEE 3511	Introduction to Electrical Systems Lab	1
EEE 4133	Electrical Machinery	3
EEE 4131	Electrical Machinery Lab	1
EEE 5144	Power Distribution Systems Analysis	4
EEE 5314	Power Electronics	4
	<b>TOTAL</b>	<b>16</b>

### **CERTIFICATE IN EMBEDDED SYSTEMS**

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 3223	Advanced Digital Electronics	3
EEE 3221	Advanced Digital Electronics Lab	1
EEE 3233	Microprocessors	3
EEE 4243	Embedded Systems	3
EEE 4273	Real Time Systems	3
EEE 4583	Interface Electronics (or equivalent)	3
EEE XXXX	Embedded Systems Project	2
	<b>TOTAL</b>	<b>18</b>

### **BACHELOR OF SCIENCE IN INDUSTRIAL OPERATIONS ENGINEERING**

TOTAL SEMESTER CREDIT HOURS: 132

#### **Freshman Year**

##### **FIRST SEMESTER**

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1414	Calculus 1	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1
SSC 2303	Principles of Economics	3

# Lawrence Technological University

TOTAL 16

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 1424	Calculus 2	4
EGE 1023	Engineering Materials	3
EGE 1102	Engr. Computer Applications Lab	2
EME 1011	Foundations of Mechanical Engr.	1

TOTAL 16

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communications	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
IOE 2012	Engineering Graphics	2

TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EGE 2013	Statics	3
IOE 3023	Industrial Mfg. Processes	3
EME 2011	Engr. Materials Lab	1
LDR 2001	Leadership Models & Practices	1

TOTAL 18

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3403	Probability & Statistics	3
EEE 2123	Circuits & Electronics	3
EGE 3003	Thermodynamics	3
EME 3013	Mechanics of Materials	3
EME 3043	Dynamics	3
IOE 3033	Engineering Numerical Methods	3
COM 3000	Writing Proficiency Exam	0

TOTAL 18

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
IOE 3011	Intro. to Indus. Engineering Projects	1
IOE 3354	Intro. to Operations Research	4

## Lawrence Technological University

IOE 3753	Simulation in System Design	3
EME 3123	Fluid Mechanics	3
IOE 3653	Stochastic Modeling	3
IOE 3453	Statistical Meth. for Process Impr.	3
LDR 3000	Leadership Seminar	0
		TOTAL 17

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
IOE 4212	Engineering Projects1	2
IOE 4454	Industrial Operations Research	4
IOE 4653	Industrial & Engineering Finance	3
IOE 4XX3*	Technical Elective*	3
IOE 4XX3*	Technical Elective*	3
IOE 4XX3*	Technical Elective*	3
LDR 4000	Leadership Capstone	0
		TOTAL 18

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
IOE 4222	Engineering Projects 2	2
IOE 4552	Occupational Ergonomics	2
IOE 4XX3*	Technical Elective*	3
IOE 4XX3*	Technical Elective*	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
		TOTAL 13

\* A list of approved electives is available in the Department of Mechanical Engineering.

Students should consult their academic advisor for program and elective requirements and further specific information on their degree program.

#### *Industrial Operations Engineering Advisor*

Vernon Fernandez, [fernandez@ltu.edu](mailto:fernandez@ltu.edu), 248.204.2571, E28D

### BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

TOTAL SEMESTER CREDIT HOURS: 132

#### Freshman Year

##### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1414	Calculus 1	4
CHM 1213	University Chemistry 1	3
CHM 1221	University Chemistry 1 Lab	1
EGE 1001	Fund. of Engr. Design Projects	1
SSC 2303	Principles of Economics	3
		TOTAL 16

# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 1424	Calculus 2	4
EGE 1023	Engineering Materials	3
EGE 1102	Engr. Computer Applications Lab	2
EME 2012	Mechanical Engineering Graphics	2
EME 1011	Foundations of Mechanical Engr.	1
		TOTAL 18

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
LLT 1223	World Masterpieces 2	3
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
EME 3023	Manufacturing Processes	3
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EGE 2013	Statics	3
LDR 2001	Leadership Models & Practices	1
EME 2011	Engr. Materials Lab	1
EGE 2233	Entrepreneurial Mindset for Engr.	3
		TOTAL 18

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3403	Probability & Statistics	3
EGE 3003	Thermodynamics	3
EME 3013	Mechanics of Materials	3
EME 3043	Dynamics	3
EGE 3012	Engineering Cost Analysis	2
MCS 3863	Linear Algebra	3
COM 3000	Writing Proficiency Exam	0
		TOTAL 17

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EME 3011	Intro. to Engineering Projects	1

## Lawrence Technological University

EEE 2123	Circuits & Electronics	3
EME 3123	Fluid Mechanics	3
EME 3133	Kinematics & Dynamics of Mach.	3
EME 4003	Design of Machine Elements	3
EME 3033	Engineering Numerical Methods	3
LDR 3000	Leadership Seminar	0
		<b>TOTAL 16</b>

### Senior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EME 4212	Engineering Projects 1	2
EME 4402	Mechanics Lab	2
EME 4013	Heat Transfer	3
EME 3214	Mechatronics	4
EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5XX3*	Technical Elective*	3
LDR 4000	Leadership Capstone	0
		<b>TOTAL 17</b>

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EME 4222	Engineering Projects 2	2
EME 4412	Thermal Science Lab	2
EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5XX3*	Technical Elective*	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
		<b>TOTAL 13</b>

### CERTIFICATE IN ENTREPRENEURIAL ENGINEERING

Students wishing to fulfill the requirements for the Certificate in Entrepreneurial Engineering should pursue the curriculum outlined above for their freshman and sophomore years, then proceed as follows:

### Junior Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3403	Probability & Statistics	3
EGE 3003	Thermodynamics	3
EME 3013	Mechanics of Materials	3
EME 3043	Dynamics	3
EGE 3012	Engineering Cost Analysis	2
MCS 3863	Linear Algebra	3
COM 3000	Writing Proficiency Exam	0
		<b>TOTAL 17</b>

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EME 3011	Intro. to Engineering Projects	1
EEE 2123	Circuits & Electronics	3
EME 3123	Fluid Mechanics	3
EME 3133	Kinematics & Dynamics of Mach.	3

# Lawrence Technological University

EME 4003	Design of Machine Elements	3
EME 3033	Engineering Numerical Methods	3
EGE 3361	Business Plan Development	1
LDR 3000	Leadership Seminar	0
		TOTAL 17

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EME 4212	Engineering Projects 1	2
EME 4402	Mechanics Lab	2
EME 4013	Heat Transfer	3
EME 3214	Mechatronics	4
EGE 4XX1/5XX1*	Entrepreneurial Elective*	1
EME 4XX3/5XX3*	Technical Elective*	3
LDR 4000	Leadership Capstone	0
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EME 4222	Engineering Projects 2	2
EME 4412	Thermal Science Lab	2
EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5XX3*	Technical Elective*	3
EGE 4XX1/5XX1*	Entrepreneurial Elective*	1
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
		TOTAL 14

\* A list of approved elective courses is available in the Department of Mechanical Engineering or at the department website. All students can select 4XX3 courses from this list for their electives. Only those students maintaining a minimum 3.0 GPA may select 5XX3 courses from the list for their electives.

Students should consult their academic advisor for elective requirements and further specific information on their degree program.

### *Mechanical Engineering Advisor*

All students should have an advisor-approved Plan of Work. Students should contact the Department of Mechanical Engineering, Room E29, ext. 2550, for their assigned faculty advisor.

## BACHELOR OF SCIENCE IN ROBOTICS ENGINEERING

TOTAL SEMESTER CREDIT HOURS: 136

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1414	Calculus 1	4
MCS 1514	Computer Science 1	4

# Lawrence Technological University

EGE 1001	Fund. of Engr. Design Projects	1
SSC 2413	Foundations of Amer. Exp.	3
	TOTAL	16

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
MCS 1424	Calculus 2	4
MCS 2514	Computer Science 2	4
MCS 2523	Discrete Mathematics	3
COM 2103	Technical & Prof. Communication	3
EME 1011	Foundations of Mechanical Engr.	1
	TOTAL	18

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2534	Data Structures	4
MCS 2414	Calculus 3	4
PHY 2413	University Physics 1	3
PHY 2421	University Physics 1 Lab	1
EME 2012	Mechanical Engineering Graphics	2
SSC 2423	Development of American Exp. 3	3
LDR 2001	Leadership Models & Practices	1
	TOTAL	18

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2423	Differential Equations	3
PHY 2423	University Physics 2	3
PHY 2431	University Physics 2 Lab	1
EME 4603	Intro. to Mechanical Systems	3
MCS 3863	Linear Algebra	3
ERE 2024	Unified Robotics I	4
	TOTAL	17

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EEE 2214	Digital Electronics and Lab	4
EEE 2123	Circuits & Electronics	3
EME 3133	Kinematics & Dynamics of Mach.	3
ERE 3114	System Modeling & Control	4
ERE 3014	Unified Robotics II	4
COM 3000	Writing Proficiency Exam	0
	TOTAL	18

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
EME 3011	Intro. to Engineering Projects	1
EEE 3233	Microprocessors	3
EME 4613	Intro. to Thermal Systems	3
MCS 3403	Probability & Statistics	3

# Lawrence Technological University

ERE 3024	Unified Robotics III	4
LDR 3000	Leadership Seminar	0
LLT 1223	World Masterpieces 2	3
	TOTAL	17

## Senior Year

### FIRST SEMESTER

Course Number	Subject	Cr. Hrs.
EME 4252	Senior Project Fundamentals	2
EEE 4243	Embedded Systems	3
ERE 4113	Discrete Control	3
EGE 3012	Engineering Cost Analysis	2
ERE 4014	Unified Robotics IV	4
SSC 2303	Principles of Economics	3
LDR 4000	Leadership Capstone	0
	TOTAL	17

### SECOND SEMESTER

Course Number	Subject	Cr. Hrs.
EME 4253	Senior Capstone Project	3
EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5XX3*	Technical Elective*	3
EME 4XX3/5xx3*	Technical Elective*	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	15

\*All students can select 4XX3 courses from EME, EEE, MCS, or ERE for their electives. Only those students maintaining a minimum 3.0 GPA may select 5XX3 courses from EME, EEE, MCS, or ERE for their electives.

### Robotics Engineering Advisor

Giscard Kfoury, [gkfoury@ltu.edu](mailto:gkfoury@ltu.edu), 248.204.2579, E28B

## MASTER OF SCIENCE IN ARCHITECTURAL ENGINEERING (COMBINED BACHELOR'S AND MASTER'S PROGRAMS)

TOTAL SEMESTER CREDIT HOURS: 164

Students seeking the Master of Science in Architectural Engineering should refer to the *Graduate Catalog* for a complete listing of courses and curriculum.

All students should have an advisor-approved Plan of Work. They should consult their academic advisors for program and elective requirements and further specific information. A flow chart is available for a graphic visualization of the program.

### Architectural Engineering Advisor

Filza H. Walters, [fwalters@ltu.edu](mailto:fwalters@ltu.edu), 248.204.2610, E25



# Lawrence Technological University

## ENGINEERING TECHNOLOGY

### ASSOCIATE OF SCIENCE IN COMMUNICATIONS ENGINEERING TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 65

#### First Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
MCS 1113	Technical Math 1	3
MCS 1023	Technical Computer Applications	3
SSC 2303	Principles of Economics	3
	TOTAL	10

#### Second Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1103	English Composition	3
MCS 1123	Technical Math 2	3
PHY 1063	Technical Physics 1	3
PHY 1100	Technical Physics Lab 1	0
	TOTAL	9

#### Third Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2313	Technical Calculus	3
PHY 1083	Technical Physics 2	3
PHY 1011	Technical Physics Lab 2	1
TEE 1023	Circuits 1	3
	TOTAL	10

#### Fourth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2323 or MCS 2023	Applied Differential Equations or Statistical Methods	3
TEE 2013	Circuits 2	3
TEE 2033	Electronics 1	3
	TOTAL	9

#### Fifth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
TEE 2053	Electronics 2	3
TEE 2073	Electrical Drawing	3
	TOTAL	9

#### Sixth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TEE 2093	Electronics 3	3
TEE 2123	Microprocessors	3
TEE 2163	Electronic Communication	3
	TOTAL	9

# Lawrence Technological University

## Seventh Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TEE 2183	Industrial Electronics	3
TEE 2226	TV/Radio Facility Engr. Mgt.	6
	TOTAL	9

## ASSOCIATE OF SCIENCE IN CONSTRUCTION ENGINEERING TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 65

## First Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
MCS 1023	Technical Computer Applications	3
MCS 1113	Technical Math 1	3
SSC 2303	Principles of Economics	3
	TOTAL	10

## Second Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1103	English Composition	3
MCS 1123	Technical Math 2	3
PHY 1063	Technical Physics 1	3
PHY 1100	Technical Physics Lab 1	0
	TOTAL	9

## Third Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2313	Technical Calculus	3
PHY 1083	Technical Physics 2	3
PHY 1101	Technical Physics Lab 2	1
TCE 1023	Architectural Graphics	3
	TOTAL	10

## Fourth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 2323 or MCS 2023	Applied Differential Equations or Statistical Methods	3
TME 2013	Statics	3
	TOTAL	9

## Fifth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TCE 2013	Construction Techniques 1	3
TCE 2033	Soils	3
TCE 2073	Surveying	3
	TOTAL	9

## Sixth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
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# Lawrence Technological University

TCE 2053	Construction Techniques 2	3
TME 2033	Mechanics of Materials	3
TIE 2123	Project Management	3
	TOTAL	9

## Seventh Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TCE 2093	Structures	3
TCE 2123	Estimating	3
TCE 2143	Specifications & Regulations	3
	TOTAL	9

## ASSOCIATE OF SCIENCE IN MANUFACTURING ENGINEERING TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 65

### First Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
MCS 1023	Technical Computer Applications	3
MCS 1113	Technical Math 1	3
TME 1023	Technical Graphics	3
	TOTAL	10

### Second Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1103	English Composition	3
MCS 1123	Technical Math 2	3
PHY 1063	Technical Physics 1	3
PHY 1100	Technical Physics Lab 1	0
	TOTAL	9

### Third Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2303	Principles of Economics	3
MCS 2313	Technical Calculus	3
PHY 1083	Technical Physics 2	3
PHY 1101	Technical Physics Lab 2	1
	TOTAL	10

### Fourth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 2023 or MCS 2323	Statistical Methods or Applied Differential Equations	3
TME 2143	Materials I	3
	TOTAL	9

### Fifth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TIE 2013	Productivity & Work Measurement	3
TIE 2063	Manufacturing Processes 1	3
TME 2013	Statics	3
	TOTAL	9

# Lawrence Technological University

## Sixth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TME 2033	Mechanics of Materials	3
TIE 2093	Metrology & Quality Control	3
TIE 2163	Engr. Economics & Accounting	3
	TOTAL	9

## Seventh Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TEE 2173	Automatic Control Systems	3
TIE 2153	Manufacturing Processes 2	3
TIE 2123	Project Management	3
	TOTAL	9

## ASSOCIATE OF SCIENCE IN MECHANICAL ENGINEERING TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 65

## First Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
MCS 1023	Technical Computer Applications	3
MCS 1113	Technical Math 1	3
TME 1023	Technical Graphics	3
	TOTAL	10

## Second Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1103	English Composition	3
MCS 1123	Technical Math 2	3
PHY 1063	Technical Physics 1	3
PHY 1100	Technical Physics Lab 1	0
	TOTAL	9

## Third Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2303	Principles of Economics	3
MSC 2313	Technical Calculus	3
PHY 1083	Technical Physics 2	3
PHY 1101	Technical Physics Lab 2	1
	TOTAL	10

## Fourth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical & Prof. Communication	3
MCS 2323 or MCS 2023	Applied Differential Equations or Statistical Methods	3
TME 2013	Statics	3
	TOTAL	9

# Lawrence Technological University

## Fifth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TME 2033	Mechanics of Materials	3
TME 2053	Dynamics	3
TME 2073	Thermodynamics	3
		TOTAL 9

## Sixth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TIE 2063	Manufacturing Processes 1	3
TME 2123	Fluids	3
TME 2143	Materials 1	3
		TOTAL 9

## Seventh Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TEE 2173	Automatic Control Systems	3
TME 2163	Computer Graphics	3
TME 2213	Mechanical Design	3
		TOTAL 9

## Engineering Technology Advisors

Jerry Cuper, [jcuper@ltu.edu](mailto:jcuper@ltu.edu), or Ken Cook, [kcook@ltu.edu](mailto:kcook@ltu.edu), 248.204.2060, E179.

## BACHELOR OF SCIENCE IN AUDIO ENGINEERING TECHNOLOGY

TOTAL SEMESTER HOURS: 124

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 1142	Intro. to C	2
MCS 1113	Technical Math 1	3
COM 1103	English Composition	3
Com 1001	University Seminar	1

PHY 1063	Technical Physics 1	3
PHY 1100	Technical Physics 1 Lab	0
TAS 1013	Music for Audio Tech. 1	3
		TOTAL 15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 1123	Technical Math 2	3
PHY 1083	Technical Physics 2	3
PHY 1101	Technical Physics 2 Lab	1
LLT 1213	World Masterpieces 1	3
TAS 1033	Music for Audio Tech. 2	3

# Lawrence Technological University

SSC 2303	Principles of Economics	3
		TOTAL 16

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical Communication	3
MCS 2313	Technical Calculus	3
LLT 1223	World Masterpieces 2	3
TEE 2033	Intro. to CIR. Analy.	3
TAS 3033	Audio Principles 1	3
LDR 2001	Leadership Models & Practices	1
		TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TAS 3043	Audio Principles 2	3
CHM 3114	Fundamentals of Chemistry	4
TEE 2033	Electronics 1	3
TEE 3103	DC/AC Circuits	3
SSC 2423	Development of Amer. Exp.	3
		TOTAL 16

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
TAS 3013	Adv. Audio Principles 1	3
TAS 3034	Audio Acoustics	4
TEE 2053	Electronics 2	3
TME 3333	Six Sigma 1	3
LDR 3000	Leadership Seminar Series	0
		TOTAL 16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TEE 2093	Electronics 3	3
TAS 3053	Adv. Audio Principles 2	3
TME 3113	Engr. Mechanics	3
TIE 3163	Engr. Economic Analysis	3
	Open Elective	3
COM 3000	Writing Proficiency Exam	0
		TOTAL 15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
TAS 4103	Audio Senior Project	3
TAS 4133	Audio System Integration	3
TIE 3203	Technical Project Management	3
	Junior/Senior Tech. Elective	3

# Lawrence Technological University

TOTAL 15

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TAS 4142	State of Art Sound Appl. Seminar	2
TEE 4214	Embedded Processors	4
TIE 4115	Senior Project	5
MCS 3324	Applied Differential Equations	4
LDR 4000	Leadership Capstone	0

TOTAL 15

## BACHELOR OF SCIENCE IN CONSTRUCTION MANAGEMENT

TOTAL SEMESTER CREDIT HOURS: 126

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
LLT 1213	World Masterpieces 1	3
MCS 1113	Technical Math 1	3
PHY 1063	Technical Physics 1	3
PHY 1100	Technical Physics 1 Lab	0
TCE 1023	Architectural Graphics	3

TOTAL 16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical Communication	3
MCS 1123	Technical Math 2	3
PHY 1083	Technical Physics 2	3
PHY 1101	Technical Physics 2 Lab	1
CHM 1154	Fundamentals of Chemistry	4

TOTAL 14

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2413	Foundations of Amer. Exp.	3
LLT 1223	World Masterpieces 2	3
MCS 2313	Technical Calculus	3
MGT 2203	Management & Supervision	3
TME 3333	Six Sigma 1	3
COM 3000	Writing Proficiency Exam	0

TOTAL 15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
SSC 2303	Principles of Economics	3

# Lawrence Technological University

MGT 2113	Intro. to Business Law	3
TCE 2143	Specifications & Regulations	3
TCE 2073	Surveying	3
LDR 2001	Leadership Models & Practices	1
		TOTAL 16

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
HRM 3013	Organizational Behavior	3
TCE 3093	Steel & Wood Structures	3
OPM 3113	Operations Management	3
TIE 3163	Engr. Economic Analysis	3
LDR 3000	Leadership Seminar Series	0
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TCE 3013	Construction Techniques	3
TCE 3033	Soil & Foundations	3
TCE 3053	Electrical/Mechanical Systems	3
TCE 3123	Const. Estimating & Scheduling	3
TIE 3203	Technical Project Management	3
TME 3113	Engineering Mechanics	3
		TOTAL 18

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TCE 4013	Construction Practicum	3
TCE 4093	Green Building Technology	3
TCE 4113	Construction Safety	3
TME 4113	Computer Design Graphics	3
HRM 4013	Employee/Mgmt. Relations	3
LDR 4000	Leadership Capstone	0
		TOTAL 15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TIE 4115	Senior Project	5
TCE 4123	Highway Engineering	3
TCE 4133	Const. Engineering Mgmt.	3
TCE 4213	Const. Contracts & Legalities	3
TME 4103	Engr. Materials	3
		TOTAL 17



# Lawrence Technological University

## BACHELOR OF SCIENCE IN ENGINEERING TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 126 (including associate degree)

Equivalent classes from an associate or Ontario diploma program are evaluated and transferred into the program during the admission process.

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1113	Technical Math 1	3
MCS 1142	Intro. to C	2
PHY 1063	Technical Physics 1	3
PHY 1100	Technical Physics 1 Lab	0
	Technical Elective	3
	TOTAL	15

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 2103	Technical Communication	3
LLT 1213	World Masterpieces 1	3
MCS 1123	Technical Math 2	3
PHY 1083	Technical Physics 2	3
PHY 1101	Technical Physics 2 Lab	1
	Technical Elective	3
	TOTAL	16

### Sophomore Year

#### First SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
SSC 2413	Foundations of Amer. Exp.	3
MCS 2313	Technical Calculus	3
CHM 3144	Fundamentals of Chemistry	4
COM 3000	Writing Proficiency Exam	0
	Technical Elective	3
	TOTAL	16

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
SSC 2423	Development of Amer. Exp.	3
SSC 2303	Principles of Economics	3
TME 3333	Six Sigma 1	3
LDR 2001	Leadership Models & Practices	1
	Technical Electives (2)	6
	TOTAL	16

### Junior Year

#### FIRST SEMESTER

# Lawrence Technological University

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TME 3204	Appl. Thermo-Fluids	4
TEE 3103	DC/AC Circuits	3
MGT 2203	Management & Supervision	3
LDR 3000	Leadership Seminar Series	0
LLT/SSC/PSY XXX3	Junior/Senior Hum Elec	3
	Open Elective	3
	TOTAL	16

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 3324	Applied Calculus & Differential Eq.	4
TIE 3203	Technical Project Management	3
TIE 3063	Manufacturing Engr. Processes	3
TME 3113	Engr. Mechanics	3
TME 4343	Six Sigma 2	3
	TOTAL	16

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
HRM 3023	Human Resource Management	3
OPM 3113	Operations Mgmt.	3
TIE 3163	Engr. Economic Analysis	3
TME 4113	Computer Design Graphics	3
TME 4413	Lean Manufacturing	3
LDR 4000	Leadership Capstone	0
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
TIE 4115	Senior Project	5
TEE 4214	Embedded Processors	4
TEE 4224	Transducers & Instr.	4
TME 4103	Engr. Materials	3
	TOTAL	16

**The following courses (GCF, GCL, GCM, GCT, GCE, GCC, GCS) are for students in the Greenfield Coalition program only:**

## ASSOCIATE OF SCIENCE IN MANUFACTURING ENGINEERING/TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 70

### First Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCF 1011	Technical Graphics	1
GCF 1012	Basic Programming	2
GCL 1013	English Composition	3
GCM 1013	Technical Math 1	3
	TOTAL	9

# Lawrence Technological University

## Second Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCF 1113	Design Graphics	3
GCM 1022	Technical Math 2	2
GCT 1213	Basics of Psychology	3
GCT 1211	Foundations of Measurement	1
		TOTAL 9

## Third Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCE 2462	Engineering Economics	2
GCC 1012	Basic Chemistry	2
GCF 2013	C++	3
GCT 1221	Instrumentation	1
		TOTAL 8

## Fourth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCM 2114	Calculus	4
GCS 2113	Mechanophysics	3
GCL 2013	Communications 1	3
		TOTAL 10

## Fifth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCC 1023	Chemistry 1	3
GCC 1021	Chemistry 1 Lab	1
GCM 2413	Statistical Methods	3
GCT 1112	Machining Processes	2
		TOTAL 9

## Sixth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCS 2213	Physics 1	3
GCS 2311	Physics 1 Lab	1
GCE 2412	Manufacturing Planning	2
GCT 2511	Design Project	1
GCT 2012	Engineering Materials	2
		TOTAL 9

## Seventh Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCT 2112	Manufacturing Processes	2
GCS 2313	Electroscience	3
GCT 2452	Ethics in Industry	2
		TOTAL 7

## Eighth Semester

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
GCT 2182	Tool Design	2
GCT 2461	Control Systems	1

# Lawrence Technological University

GCT 2212	Electrical Machines	2
GCT 2314	Manufacturing Systems 1	4
	TOTAL	9

## **College of Management**

**Dean**

Bahman Mirshab

M331, 248.204.3050

**ABOUT THE COLLEGE OF MANAGEMENT**

Using a model of theory and practice, the College of Management prepares our students for opportunities in the global economy through interdisciplinary educational programs that emphasize the business, ethical, social, and technological dimensions of leadership and management.

The College of Management provides one of the most comprehensive interdisciplinary programs in global leadership and management in the country. Students learn how to address the business, social, ethical, and technological dimensions of leadership in today's complex, fast-paced global economy.

The College of Management is the ideal academic institution for students to prepare for the challenges and opportunities they will encounter as tomorrow's leaders in global organizations in the private, public, and non-profit sectors.

Students gain the knowledge, research capabilities, and leadership skills necessary to be effective in leading and managing in global organizations through an intensive program of interdisciplinary coursework, workshops, seminars, and directed research. Critically, students learn how to apply their knowledge and skills to the practice of global leadership and management.

The College of Management's academic programs are accredited by both the Association of Collegiate Business Schools and Programs (ACBSP) and the International Assembly of Collegiate Business Education (IACBE), one of only three institutions in the state of Michigan to be accredited by both organizations. Lawrence Tech is a member of the Association to Advance Collegiate Schools of Business (AACSB), and the College of Management has applied to be eligible for the AACSB accreditation process. Since 1998, the College has consistently received top scores in a nationwide student satisfaction survey.

**DEGREE PROGRAMS**

Lawrence Tech's College of Management offers these programs:

**Bachelor's Programs**

Bachelor of Science in Business Administration

Bachelor of Science in Information Technology

**Master's Programs**

Master of Business Administration

Master of Science in Information Systems

**Dual Degree Programs**

Master of Business Administration/Master of Science in Information Systems

Master of Business Administration/Master of Engineering Management

Master of Business Administration/Master of Architecture

# Lawrence Technological University

## Doctoral Programs

Doctor of Business Administration

## Graduate Certificate Programs

Graduate Certificate in Interdisciplinary Sustainability

Graduate Certificate in Nonprofit Management and Leadership

Graduate Certificate in Project Management

## Bachelor of Science in Business Administration

Whether you have your sights set on becoming the next CEO of a global firm, flexing your creative muscles to execute award-winning marketing campaigns, or running your own business, the Bachelor of Science in Business Administration will prepare you to lead in a changing world. The Business Administration degree provides a strong foundation in business combined with a major of the student's choice and a broad liberal arts education emphasizing the communication and critical thinking skills employers demand.

Majors in Business Administration include:

- Accounting
- Finance
- General Business
- Information Technology
- Marketing

In the Business Administration program, students can:

- get real business experience in and out of the classroom through consulting projects, Quest projects, and participation in on-campus activities such as the Collegiate Entrepreneurs Organization;
- compete to earn scholarship funds while learning and helping a community organization through the Community Connect competition;
- earn early admission to the MBA program;
- learn from an outstanding faculty with extensive industry and academic experience;
- participate in small classes that encourage team building and personal interaction with their instructors and peers;
- gain expert advising from a faculty member in their program, maximizing opportunities at Lawrence Tech and creating a path for success after graduation;
- take advantage of paid internships; and
- participate in a network of links to professional organizations and industrial partners. For instance, in Fall 2012, students were provided with the opportunity to attend a meeting of the Economic Club of Detroit and meet a distinguished U.S. ambassador.

## BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

TOTAL SEMESTER CREDIT HOURS: 122

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1

# Lawrence Technological University

COM 1103	English Composition	3
MCS 1214	Intro. to Math Analysis 1	4
MGT 2203	Leadership & Management	3
	Natural Science 1	3
	TOTAL	14

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
MCS 1224	Intro. to Math Analysis 2	4
COM2103	Technical & Prof. Communication	3
SSC 2413	Foundations of Amer. Exp.	3
	Natural Science 2*	3
	Natural Science Lab*	1
	TOTAL	17

## Sophomore Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ACC 2013	Intro to Financial Accounting	3
SSC 2303	Principles of Economics	3
SSC 2423	Development of Amer. Exp.	3
LLT 1223	World Masterpieces 2	3
LDR 2001	Leadership Models & Practices	1
	Open Elective	3
	TOTAL	16

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
ACC 2023	Intro. to Managerial Accounting	3
MCS 2113	Statistics 1	3
SSC 2403	Principles of Economics 2	3
COM 2113	Speech	3
MGT 2113	Intro. to Business Law	3
	TOTAL	15

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MGT3033	International Trade	3
MGT 3013	Project Management	3
HRM 3023	Human Resource Management	3
LDR 3000	Leadership Seminar Series	0
MKT 3013	Marketing	3
	Major Course	3
	TOTAL	15

# Lawrence Technological University

## SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
FIN 3013	Financial Management	3
MGT 3053	Business Internship	3
INT 3103	Information Technology Mgmt.	3
COM 3000	Writing Proficiency Exam	0
	Major Course	3
	Open Elective	3
	TOTAL	15

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MGT 3113	Operations Management	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
LDR 4000	Leadership Capstone	0
	Major Courses (2)	6
COM 3XX3/4XX3	Junior/Senior Elective	3
	TOTAL	15

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MGT 4213	Strategic Mgmt. & Business Policy	3
MGT 4113	Applied Decision Analysis	3
MGT 4023	Simulation & Management Science	3
	Major Course	3
	Open Elective	3
	TOTAL	15

\*Students can also take certain 4-credit science courses that have a laboratory component to satisfy Natural Science 2 and Natural Science Lab requirements

For more information, contact Karen Evans, Director of Undergraduate Business Programs, at 248.204.3050 or email [ump@ltu.edu](mailto:ump@ltu.edu).

## Bachelor of Science in Information Technology

The Bachelor of Science in Information Technology combines fundamental business concepts with current technologies. Students learn to solve complex business problems by applying the technology learned through their course work. Students develop and/or enhance existing skills for careers in such fields as network administration, systems analysis, business analysis, systems programming, application support, and Internet-related technologies. All students in the program prepare for the Institute for Certification of Computing Professionals (ICCP) examination, a three-part test covering management, software engineering, and systems development. Students who successfully complete the ICCP examination can earn the Certified Computing Professional designation and be ready to pursue advanced-level certifications. Students can complete their junior and senior year requirements in the classroom or online.



# Lawrence Technological University

The Bachelor of Science in Information Technology is designed with four goals in mind:

1. To provide students with the theoretical concepts necessary for success in industry.
2. To give students hands-on experience using current technologies.
3. To provide students with an employable skill set.
4. To provide industry with highly trained and competent information technology professionals.

The Bachelor of Science in Information Technology is especially well suited to transfer students or to students with associate degrees, who are often able to complete their bachelor's degree with as few as 60 additional credit hours at Lawrence Tech. Freshman students are also welcomed into the program. Courses transferred from other institutions or taken at Lawrence Tech will be evaluated as electives or Lawrence Tech equivalents. Qualified students can apply for early admission to the MBA or MSIS program.

## BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

TOTAL SEMESTER CREDIT HOURS: 120

### Freshman Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
COM 1001	University Seminar	1
COM 1103	English Composition	3
MCS 1214	Intro. to Math Analysis 1	4
	Natural Sciences 1	3
MCS1003	Intro. to Computer Applications <sup>3</sup>	
	TOTAL	14

#### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1213	World Masterpieces 1	3
MCS 1224	Intro. to Math Analysis 2	4
	Natural Sciences 2*	3
	Natural Sciences Lab*	1
SSC 2413	Foundations of Amer. Exp.	3
MCS 1142	Intro. to C	2
	TOTAL	16

### Sophomore Year

#### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LLT 1223	World Masterpieces 2	3
MCS 1514	Computer Science 1	4
INT 3103	Information Technology Mgmt.	3
LDR 2001	Leadership Models & Practices	1
COM 2103	Technical & Prof. Comm.unication	3
	Open Elective	3
	TOTAL	17

#### SECOND SEMESTER

# Lawrence Technological University

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MCS 2514	Computer Science 2	4
SSC 2423	Development of Amer. Exp.	3
MCS 2113	Statistics 1	3
	Open Elective	3
	Upper Class Elective	3
	<b>TOTAL</b>	<b>16</b>

## Junior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 3000	Leadership Seminar Series	0
INT 3203	Technical Infrastructure	3
INT 3803	Database Design & Implementation	3
INT 4013	Telecommunications & Networks	3
	Open Electives (2)	6
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
MGT 3103	Project Management	3
INT 3603	eBusiness Strategies	3
COM 3000	Writing Proficiency Exam	0
	Upper Class Electives (3)	9
	<b>TOTAL</b>	<b>15</b>

## Senior Year

### FIRST SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
LDR 4000	Leadership Capstone	0
INT 4023	Exploration of IT Security	3
INT 4203	Systems Analysis/Design	3
LLT/SSC/PSY 3XX3/4XX3	Junior/Senior Elective	3
	Upper Class Electives (2)	6
	<b>TOTAL</b>	<b>15</b>

### SECOND SEMESTER

<i>Course Number</i>	<i>Subject</i>	<i>Cr. Hrs.</i>
INT 4303	IT Business Strategies	3
	Open Electives (2)	6
	Upper Class Elective	3
	ICCP Exam	0
	<b>TOTAL</b>	<b>12</b>

\*Students can also take certain 4-credit science courses that have a laboratory component to satisfy Natural Science 2 and Natural Science Lab requirements

### Professional Certification Option (9 credit hours)

Students in the BSIT program can complete an industry certification of their choice. The following list represents the most desirable certifications in the field:

Cisco Certified Network Professional

## Lawrence Technological University

Cisco Certified Professional  
CompTIA A+, Network+, IT Project+, and Linux+ (pick three)  
CompTIA Master CIW Certification  
CompTIA Master CIW Enterprise Developer  
Microsoft Certified Application Developer  
Microsoft Certified Database Administrator  
Microsoft Certified Solution Developer  
Microsoft Certified Systems Administrator  
Microsoft Certified Systems Engineer  
Novell Certified Netware Engineer  
Oracle Certified Professional  
Security Certified Program Network Professional

Additional certification tracks will be evaluated at the students' request.

For more information, contact Karen Evans, Director of Undergraduate Business Programs, at 248.204.3050 or email [ump@ltu.edu](mailto:ump@ltu.edu).

## **Board of Trustees**

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#### **Vice President of University Advancement**

Associate Vice President and Chief Development Officer

University Special Events and Services

Manager, Alumni Relations and Alumni Giving

Director, Philanthropy

Director, Philanthropy

Executive Director, Economic Development and  
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#### **Provost and Chief Academic Officer**

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Director, eLearning Services

Director, University Library

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Coordinator, Entrepreneurship

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### **Enrollment Services**

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University Registrar and Director, Institutional  
Research and Academic Planning

Assistant Director, Enrollment Services

Director, Admissions

Assistant Director, Admissions

Interim Director, Financial Aid and Veteran Affairs

Director, Leadership Programs

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# Lawrence Technological University

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Director, Human Resources  
Director, Campus Facilities  
Director, Campus Safety  
    Supervisor, Campus Safety  
University Architect  
Manager, University Bookstore

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#### Dean of Arts and Sciences

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Chair, Humanities, Social Sciences, and Communication  
Chair, Mathematics and Computer Science  
Chair, Natural Sciences  
Director, English as a Second Language  
    and Writing Proficiency Exam

### Hsiao-Ping Moore

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Melinda Phillips  
David Bindschadler  
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Nawal Abbas

### Engineering

#### Dean of Engineering

Associate Dean  
Associate Dean, Graduate Studies and Research  
Chair, Civil Engineering  
Chair, Electrical and Computer Engineering  
Chair, Engineering Technology  
Chair, Mechanical Engineering  
Director, Biomedical Engineering  
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### Management

#### Dean of Management

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Karen Evans  
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# Lawrence Technological University

## Student Affairs

### Dean of Students

Executive Director of Student Affairs

Disability Services

First-Year Programs

International Programs

International Student Advisor

International Student Advisor

Director, Campus Dining

Director, Career Services

Assistant Director

Career Services Advisor

University Psychologist, Clinical Counseling Services

Clinical Counselor

Program Coordinator, KCP Grant

Director, Recreation, Athletics, and Wellness

Assistant Director

Assistant Director

Student Engagement

Student Engagement Coordinator

Student Engagement Coordinator

Director of Residence Life, University Housing

Residence Hall Coordinator, Housing-South

Assistant Residence Hall Coordinator, Housing-North

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Laura Affer

Kalie Wale

Nancy Thomas

Margaret (Peg) Pierce

Jennifer Cunningham

Amanda Deacon

Jeff Betman

Lusine Hambarzumyan

Eula Muckleroy

Scott Trudeau

Don Gillette

Mary Pinkowski

Eula Muckleroy

Elizabeth (Liz) Artz

Kim Osantowski

VaNessa Thompson

Joy Sportel



## Faculty Committees

### **Academic Achievement and Assessment**

The Committee on Academic Achievement and Assessment coordinates policy and procedures related to both college and University assessment programs. The committee's principal responsibility is to promote improvements in learning through implementation of the University's North Central Association plan for academic assessment. The committee is advisory to the Council of Academic Deans, and its members and chairperson are appointed by the provost.

### **Academic Program Review**

The Academic Program Review Committee is an advisory committee composed of academic representatives of each college as well as service representatives from the University Library, IT Service Delivery, eLearning Services, and other units. Chaired by the vice president for finance and administration, this committee advises faculty members on documenting the impact of proposed new programs on academic and administrative services.

### **Academic Standing**

The Academic Standing Committee consists of the dean of students, the director of admissions, and representatives from the four colleges. Members are appointed by the provost upon recommendation of the deans and the group is chaired by the dean of students. The committee acts on petitions of students who have been suspended from the University for academic reasons.

### **Additional Credit Review**

The Additional Credit Review Committee is chaired by the registrar and has a faculty representative from each of the four colleges. It reviews all applications from students for additional transfer credit and for guest credit.

### **Council of Academic Deans**

The Council of Academic Deans consists of the four college deans, the dean of students, and the dean of graduate programs. The council provides the principal advice to the provost on academic and administrative affairs.

### **Faculty Councils**

Organized to meet its own structural requirements, each college has a Faculty Council that advises the dean on academic and other matters. The councils are independent of administrative channels and may consider any issues they believe appropriate but are particularly involved with faculty personnel and curricular concerns within their colleges. Membership of the Faculty Councils consists of full-time college faculty. Advice of Faculty Councils is not binding on academic deans, but it is considered significant to administrative decision making.

### **Faculty Senate**

The Faculty Senate is the entity officially constituted to represent and promote University-wide faculty aims for the purpose of furthering academic excellence and contributing to the long-term success of the University. Membership of the Faculty Senate consists of regular full-time faculty on annual contracts.

# Lawrence Technological University

## **Financial Aid and Scholarships**

The Financial Aid and Scholarships Committee consists of faculty representatives from the four colleges, one of whom serves as chairperson, and of representatives from various University service departments. The director of financial aid and veterans affairs is an ex-officio member. Members are appointed by the provost. The committee advises the provost on policy and distribution of all University scholarships and works closely with the Office of Financial Aid.

## **Graduate Council**

The Graduate Council consists of faculty with program experience or interests at the graduate level, and of observers from academic-service functions. All members are appointed by the provost upon the recommendation of the college deans. This group reviews and recommends graduate policies and programs. The dean of graduate programs is an ex-officio member.

## **Library**

The Library Committee acts as an advisory board for the director of the library on service and policy issues. It consists of six faculty members, one each from architecture, engineering, humanities, management, natural sciences, and technology, one of whom serves as chairperson. Members are appointed by the deans. The director of the library is an ex-officio member.

## **Research Support Services**

The Research Support Services Committee is made up of the associate provost, a representative of the vice president for finance and administration, a representative of the Office of Economic Development and Government Relations, and five full-time faculty members, one appointed by the dean of each college and one by the Faculty Senate. This committee functions to identify and recommend improvements in infrastructure and support for Lawrence Tech faculty initiating and conducting research.

## **Standing Committee on Tenure Removal**

A panel of the Standing Committee on Tenure Removal, selected in accordance with Section 2 of the Faculty Handbook, hears all cases brought under section 2.10.7 for removal of tenure from a tenured faculty member.