Assessment Report

2007 – 2008 Academic Year

Lawrence Technological University

Walter K. Dean
Director of Assessment

Lawrence Technological University Assessment Report 2007 – 2008 Academic Year

Introduction and Summary

Assessment of student educational outcomes at Lawrence Technological University is the responsibility of the University Assessment Committee. This committee is chaired by the Director of Assessment, a faculty member appointed by the Provost; one member from each academic department; and as non-voting members, the Provost, the Associate Provost, and the Coordinator of Institutional Research and Assessment:

University Assessment Committee Membership (2007-2008)

Chair and Director of Assessment	Walter Dean

College of Architecture

Architecture	Daniel Faoro
Art and Design	Thomas Regenbogen

College of Arts and Science

Mathematics and Computer Science	Jonathan Brewster
Natural Sciences	Nicole Villeneuve
Humanities, Social Sciences and Communication	Harold Hotelling

College of Engineering

Civil Engineering	Donald Carpenter
Electrical and Computer Engineering	Marianne Wilhelm
	William Kolasa
Engineering Technology	William White
Mechanical Engineering	Christopher Riedel

College of Management

College of Management	Diane Cairns

Ex-Officio Members

Associate Provost	Stephen Howell
Coordinator, Institutional Research and Assessment	Mary Thomas

The Committee meets every other week during the academic year, in addition to spring and fall planning retreats. Its function is to advise the Director of Assessment, to plan and carry out assessment programs of the University, to supervise and coordinate assessment activities within their own departments, and to report these back to the whole committee.

In addition, individual meetings took place during the fall term at which each individual Committee member, the Director of Assessment, the Associate Provost, and the Department Chair or Program Director (and in some cases the Coordinator of Institutional Research and Assessment) discussed the specifics of assessment in each program, and agree on strategies for assessment within the Departments. These meeting help to ensure the vitality of the assessment effort within individual programs.

Most of the members of the Assessment Committee have three hours of release time per year to dedicate the necessary time to the assessment activities in their department.

Student Assessment Committee Activities for the Academic Year 2007-2008

1. Assessment Day 2007 (September 21, 2007)

Assessment Day is an all-day in-service faculty program held on the third Friday of each fall term. Its purpose is to give the faculty an opportunity each year to focus on student outcomes assessment, to share information and methods, and to learn about assessment in the areas of our educational goals.

The 2007 Assessment Day, for the first time, consisted entirely of presentations by members of the Lawrence Tech faculty, reflecting a the fact that we now feel sufficient confidence in our assessment program and expertise to be able to present our own work to our colleagues and not have to rely on bringing in outside experts every year.

The program began with a report on the LTU Writing Assessment program by director Joyce Munro. This report concentrated on the administration of the program. A more detailed look at the program was undertaken this year and will be reported later in this section.

A "first look" report at the results of the Critical Thinking assessment done in Spring 2007 (seniors) and before Fall 2007 (entering students) were presented. The results of this assessment were reported in detail in the 2006-2007 Assessment Report.

The main topic for the 2007 Assessment Day program was "Character Education", broadly defined as that part of the educational process directed toward ethical and moral issues. The purpose of the program, which consisted of presentations by four faculty members from each of the four Colleges, was to stimulate faculty discussion, beginning with Departmental breakout sessions in the afternoon, directed toward generating a consensus on what areas of character education would be appropriate at a secular institution such as Lawrence Tech. (Earlier discussions in this area had suggested that such a consensus would be difficult to achieve.) This discussion is ongoing, but apparently the two areas of agreement are those of professional ethics, and academic ethics.

The three questions addressed in the Departmental breakout sessions were:

(1) What components of each program promote "develop personal values as the foundation of integrity and professional ethics" (Goal V.2)? How can our success in instilling a sense of professional ethics be measured?

(2) How are "knowledge in their fields" and "effective use of technology in their fields" (Goals I.1 and I.2) assessed, or how will they be assessed, in each program?

(3) What is the best way to assess "mathematical competence" (Goal II.1)? How could this be done as part of each program's Assessment Plan?

The 20007 Assessment Day program and presentations are reproduced on the following pages.

Lawrence Technological University
Assessment Day
Friday, September 21, 2007

Lear Auditorium - T429

AGENDA

Continental Breakfast 8:30 – 9:00 am

Welcome 9:00 – 9:15 am
- *Dr. Lewis Walker (President)*

Introduction 9:15 – 9:30 am
- *Dr. Maria Vax (Provost)*
- *Dr. Steven Howell (Interim Associate Provost)*
- *Dr. Walter Dean (Director of Assessment)*

"Closing the Loop" on Writing Assessment 9:30 – 10:00 am
- *Ms. Joyce Munro*

Spring 2007 Critical Thinking Assessment: First Look 10:00 – 10:30 am
- *Ms. Diane Cairns, Dr. Don Carpenter*

Break 10:45 – 11:00 A.M.

Understanding and Assessing Character Education 10:45 – 11:45 am
- *Dr. Matt Cole (College of Arts and Sciences),*
  "Developmental Trajectory of Personal Values, Integrity, and Professional Ethics"
- *Dr. Don Carpenter (College of Engineering)*
  "Academic Integrity and Ethical Decision Making in Engineering Undergraduates"
- *Dr. Robert Inskeep (College of Management)*
  "Strengthening Ethical Behavior in Business"
- *Dr. Dan Faoro (College of Architecture)*
  "Professional Ethics and Values in Architecture and Design Professions"

Panel Discussion 11:45 am – 12:15 pm
- *Drs. Cole, Carpenter, Inskeep and Faoro*

Lunch – *Café Lawrence* 12:15 pm – 1:00 pm

Departmental Sessions (Locations to be announced) 1:00 – 3:00 pm

Adjournment

Developmental Trajectory of Personal Values, Integrity, and Professional Ethics

Dr. Matt Cole (College of Arts and Sciences)

Developmental Trajectory of Personal Values, Integrity, and Professional Ethics

Matthew L. Cole, Ph.D.
Psychology Program Director,
Department of Humanities, Social Sciences, and Communication

Overview

- What is sociomoral development and how is it related to personal values, integrity and ethics?
- What are the developmental trends in sociomoral development?
- What are some of the ways in which faculty can introduce character education into the classroom curriculum in order to help shape students to become "morally serious people"?

AAC&U *Greater Expectations* Report (2002)

- The Association of American Colleges and Universities concept of *"responsible learners"*
  - Students who "appreciate others, while also assuming accountability for themselves, their complex identities, and their conduct."
  - "By weaving moral reasoning into the social fabric of life and work, they help society shape its ethical values, and then live by those values" (p.23).

Sociomoral Development

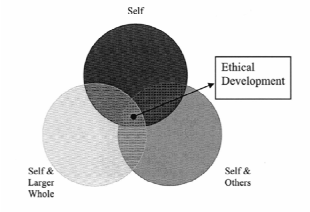
Sociomoral Development

- Morals = principles of right and wrong behavior
- Ethics = the discipline dealing with what is good and bad and with moral duty and obligation
- Ethics reflect the cultural values and mores of the society in which they are formulated.
- Ethics address in one way or another the issues of respect, rights, confidentiality, informed consent, diversity, well-being of consumers, competency, professional boundaries, conflict of interest, honesty, and responsibility to society.

Sociomoral Development

- Sociomoral development refers to the growing capacity to relate emotionally, ethically, and intellectually to the external world.
- Encompasses social and personal development.
- Refers to age-appropriate cognitive capacities to perceive, wrestle with, and logically resolve the complexities of the moral aspects of life and real-life moral contexts.

Components of Sociomoral Development



Components of Sociomoral Development: Identity

- Sociomoral development begins with knowing one's self.
- We must know what is important to us, what our worldview is, and how our cultural backgrounds, personal histories and personal values influence that worldview.
- How we view the world and ourselves within it shapes our responses to choices and decisions that confront us.

Components of Sociomoral Development: Relationship

- Sociomoral development involves learning about relationships between self and others.
- How will my action impact someone else and why should I care about that impact?
- Exploring how we interact with others and our beliefs about the value of those interactions is an essential component of promoting ethical development.

Components of Sociomoral Development: Accountability

- Ethical decisions and behaviors impact larger wholes beyond the individual, in what may be termed civic responsibility.
- Families, communities, organizations, institutions, corporations, and nations can be either positively or negatively impacted by the actions of individuals.
- Sociomoral development must include the concepts of accountability and responsibility.

Chickering's Model of Sociomoral Development

- Based on Eric Erikson's developmental theory, Kohlberg's and Gilligan's theories of moral development, and Eisenberg's theoretical perspective on prosocial behavior
- Chickering proposed seven vectors of sociomoral development that align with the development of traditional-aged college students.

Chickering's Model of Sociomoral Development

1. Developing Competence
2. Managing Emotions
3. Developing Autonomy
4. Establishing Identity
5. Developing Interpersonal Relationships
6. Developing Purpose
7. Developing Integrity

1. Developing Competence

- Intellectual competence
  - knowledge acquisition & critical thinking skills
  - capacity for analysis, synthesis, evaluation, & creation of ideas
- Physical and manual competence
  - Athletic and artistic achievement
- Social/interpersonal competence
  - Listen, cooperate, communicate

2. Managing Emotions

- Increasing awareness of one's feelings
  - aware of range and variety of impulses
  - integration of feelings, which allows flexible control and expression
  - tries to find new modes of expression
  - assess consequences
  - know how to handle different feelings
  - define what will be expressed to whom

3. Developing Autonomy

- At this stage, students develop increased emotional independence, self-direction, problem-solving ability, persistence, and mobility
- Students recognize and accept the importance of interdependence.

4. Establishing Identity

- A positive identity includes
  - comfort with body and appearance
  - comfort with gender and sexual orientation
  - a sense of one's social and cultural heritage
  - a clear concept of self and comfort with one's roles and lifestyle
  - a secure sense of self in light of feedback from significant others
  - self-acceptance and self-esteem
  - personal stability and integration

5. Developing Interpersonal Relationships

- Increased tolerance for and acceptance of differences between individuals
- Increased capacity for mature and intimate relationships
- More reciprocal and empathetic

6. Developing Purpose

- This vector consists of developing clear vocational goals, making meaningful commitments to specific personal interests and activities, and establishing strong interpersonal commitments.
- Direction for one's life through assessment and clarification of interests, educational and career options, and lifestyle preferences
- Integrated with sense of identity

7. Developing Integrity

- Students progress from rigid, moralistic thinking to a more humanized, personalized value system that acknowledges and respects the beliefs of others. Values and actions become congruent.
- Defining set of values to guide actions
  - humanizing of values
- Shift from literal doctrine set of beliefs to awareness of relativity of values
  - personalizing of values

7. Developing Integrity

- Personal code -personal assessment & direction serving as guide to behavior
  - congruence between beliefs and behavior
- Congruence between values and actions
- Viewing values from post-conventional level of morality (Kohlberg's final stage of moral development—guided by universal moral principles, not the laws of society)

Developmental Trajectory Through Vectors

- Chickering posits that students progress through the first three vectors simultaneously during the freshman and sophomore years.
- Students generally progress through the fourth vector during their sophomore and junior years.
- Students progress through the last three vectors simultaneously during their junior and senior years.

Vectors and Social Norms

- Chickering's vectors depend largely on social norms.
- Vectors are dynamic since social values change through time.
- Social values are different around the world.
- Closely aligned with Dewey's progressivist approach to education—moral development is impacted by the social culture of schools

Character Education

- Character education has been a vital part of US school curricula.
- In 1901, the National Education Association endorsed character training in the schools.
- "The fundamental consideration in any system of schools is the development of moral character".

Maryland Value Education Commission Character Objectives

1. Personal integrity and honesty rooted in respect for the truth, intellectual curiosity, and love of learning
2. A sense of duty to self, family, school, and community
3. Self-esteem rooted in the recognition of one's potential

Maryland Value Education Commission Character Objectives

4. Respect for the rights of all persons regardless of their race, religion, gender, age, physical condition, or mental state
5. A recognition of the right of others to hold and express differing views, combined with the capacity to make discriminating judgments among competing opinions

Maryland Value Education Commission Character Objectives

6. A sense of justice, rectitude, and fair play, and a commitment to them
7. A disposition of understanding, sympathy, concern, and compassion for others
8. A sense of discipline and pride in one's work and respect for the achievement of others

Maryland Value Education Commission Character Objectives

9. Respect for one's property and the property of others, including public property
10. Courage to express one's convictions

What Works in Character Education: Strategies

- Strategies that promote positive youth development (Berkowitz & Bier, 2003).
- Character Education Partnership National Forum in Washington, D.C.
- Results from 66 studies representing 33 programs that fall under the rubric of educating for positive youth development and that have evidence of being effective.

What Works in Character Education: Strategies

- Strategies that promote positive youth development:
  - Student-centered peer discussions
  - Interactive strategies, such as class meetings, student governance, and peer tutoring that contribute to perspective-taking experiences
  - Problem-solving and decision-making training

What Works in Character Education: Strategies

- Strategies that promote positive youth development (cont):
  - Direct training of social, emotional, and personal management skills (such as conflict resolution or anger management)
  - Cooperative learning
  - Self-management skills training and awareness
  - Parent-training and involvement

What Works in Character Education: Outcomes

- Outcomes for programs utilizing previous strategies:
  - Improved sociomoral cognition
  - Prosocial behavior and attitudes
  - Development of problem-solving skills
  - Reduction of violence and aggression
  - Decrease in substance abuse
  - Development of emotional competency

What Works in Character Education: Outcomes

- Outcomes for programs utilizing previous strategies (cont):
  - Moderation of risk attitudes
  - Improved school behavior
  - Increased academic achievement and academic goal setting
  - Improved self-expectations and motivation

What Works in Character Education: Barriers

- Current traditional-aged college students are part of Generation Y
  - aka the *millennials* or *internet generation*
- Students are focused more on successful end results, and less on the process or human interactions involved in obtaining the end results

What Works in Character Education: Barriers

- The face of friendship is different for today's college students as there is decreased person-to-person contact
  - Friendships develop on "Facebook", "MySpace" and other virtual contact settings that inhibit intimate conversation
  - 75% of students have a "Facebook" account
  - 34% use websites as their primary source of news
  - 15% are logged on 24/7

What Works in Character Education: Recommendations

- Articulated philosophy statement that includes the desired character goals of the school and the shared vision of the school's purpose
- A committed staff that has been adequately trained (and who are adequately supported in an on-going manner) to implement the program fully and faithfully
- Student empowerment strategies such as peer conflict resolution, student governance, and collaborative problem solving

What Works in Character Education: Recommendations

- Opportunities for service to others, such as service learning, community service, and school-based responsibilities
- Developmental discipline, i.e., discipline strategies focused on the long-term improvement of student character and skills rather than the use of punitive behaviors to bring about immediate cessation of the undesirable behavior

What Works in Character Education: Recommendations

- Ongoing evaluation and feedback of data to ensure that desired student outcomes are being achieved and to continuously improve the implementation process
- Leadership commitment to sufficient and sustained implementation
- Practices that strengthen student-teacher relationships and increase students' perception of school as caring community to which they belong

What Works in Character Education: Links

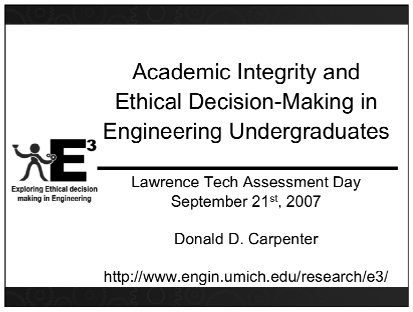
http://www.collegevalues.org/resources.cfm

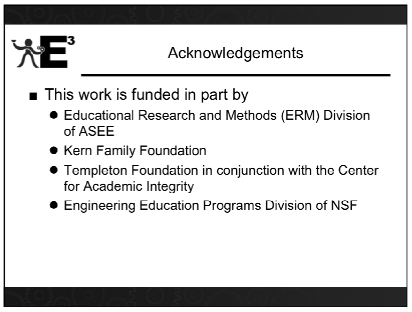
http://www.ltu.edu/student_affairs/student_conduct.asp

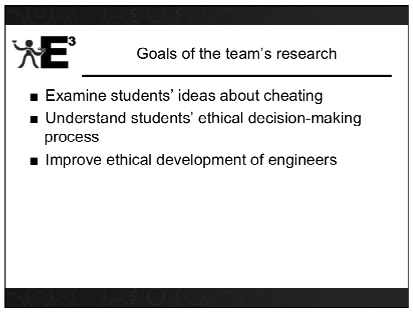
http://www.ltu.edu/currentstudents/honor_code.asp

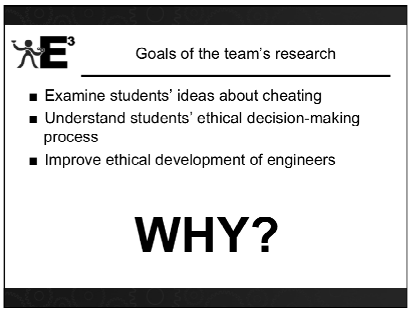
Academic Integrity and Ethical Decision Making in Engineering Undergraduates

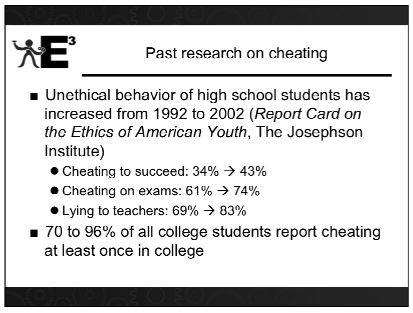
Dr. Don Carpenter (College of Engineering)

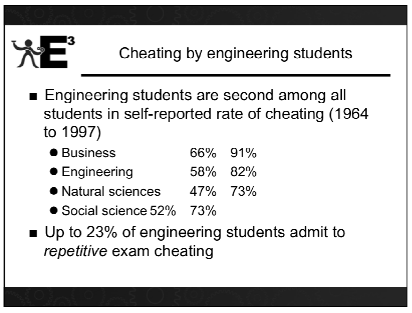












Implications of cheating

- Lack of comprehension of material by students
- Falsely earned credit or recognition for work
- Undermined efforts to develop moral integrity (character development)
- Reduced faculty and student morale
- Desensitization to cultural norm of integrity
- Unethical behavior in other contexts
  - Risky driving
  - Theft from employers
  - Shoplifting
  - Alcohol abuse
  - Cheating on taxes

Research Conducted over Seven Years

- Perceptions and Attitudes towards Cheating among Engineering Undergraduates (PACES-1)
  - Goal was to investigate general perceptions and attitudes associated with cheating
  - 139 question multiple choice survey
  - 643 engineering u'grads @ 11 institutions
- Work Experiences Study (WES)
  - Goal was to examine classroom and workplace factors that affect ethical decisions
  - 13 quantitative questions and self defined qualitative scenarios in both settings
  - 130 engineering u'grads @ 2 institutions

Research Conducted over Seven Years

- PACES-2
  - Goal was to validate and compare a theoretical model for decision making for both engineering & humanities u'grads
  - Multiple choice PACES-2 survey (TPB) and DIT-2
  - 527 engineering and humanities u'grads @ 3 institutions
- Survey of Engineering Ethical Development (SEED)
  - Goal is to use a model for ethical development to identify and disseminate best practices
  - Three part online survey that includes FE, TPB, and DIT-2
  - 4000+ engineering u'grads @ 20 diverse institutions

PACES-1 Study

- Clear relationship between students' attitude toward a behavior (their definition as "cheating", "unethical but not cheating", or "neither") and their self-reported behavior
- Students engage in behaviors that they know are wrong and that they know have significant consequences
- Factors that influence students' decisions about cheating vary by context (i.e., exams versus homework)
- *Moral obligation* and *shame* are unilateral deterrents
- Students often rationalize cheating behavior using *instructor-based* neutralizations
- Individual efforts to improve teaching and show concern for learning may reduce cheating and promote integrity

WES Study

- Past unethical behavior predicts subsequent unethical behavior in both college and workplace
- The decision-making process for college extends to the workplace
- Common factors influence decisions across setting
- College interventions could extend to professional settings

PACES-2 Study

- Engineering undergraduates cheat more in college than those in humanities, independent of number of opportunities
- Results revealed a statistically significantly different moral reasoning score for humanities students
- These differences do not exist in high school
- Psychological factors are common predictors across context and discipline
- Emphasizing higher-order learning skills and using more qualitative assessments may promote better behavior
- Understanding the common aspects of ethical decision-making may result in more effective interventions

SEED Study

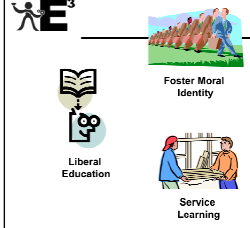
- Conduct a national assessment of approaches that positively impact the ethical development of engineering undergraduates
- Validate an empirical model of the ethical development of engineering undergraduates
- Assess the impact of educational experiences (curricular, co-curricular, and cultural) on ethical development
- Identify and disseminate approaches that have the most positive impact on ethical development

Questions to Ponder

- As educators, what does it mean to prepare our students for ethical practice in engineering?
- What kind of educational environment would most likely engender this sort of development? Does the current environment reflect this ideal?
- How can we best move engineering education forward to accelerate the ethical development of our students?

Our Team Belief

- The point is not to stop cheating, but rather to foster moral growth (character development) such that students act with integrity
- Cheating prevention consumes time and energy and really only produces better cheaters
- Current practices focus more on authority (who has it and who is trying to circumvent it)



Institutional Character Education!

STRENGTHENING ETHICAL BHAVIOR IN BUSINESS
Presented by Bob Inskeep, Ph.D.
College of Management, Lawrence Technological University
Assessment Day - September 21, 2007

Let me begin by stating that I am deeply concerned about the ethical lapses we all see in our society, and so when Diane Cairns asked me to speak about the topic from the perspective of the world of business, I agreed figuring I would learn something. So today I would like to talk to you about some of what I have learned about the ethical landscape in business what those organizations are doing about enhancing ethical practices and some thoughts about how that information might inform our actions as educators interested in strengthening the ETHICAL CAPACITY of the future captains of industry.

Before turning attention actual BEHAVIOR in the workplace, let me begin with a brief description of the prevailing perception of business behavior, and the potential impact of those perceptions on the future behavior of our present day students.

- If one were to rely upon the spate of reports of corporate scandals, unethical behavior and illegal acts evident in recent years, one might conclude that integrity and right action is dead in business today. The stories of the Enrons, Arthur Andersons and TYCO industries and are legion. But these moral lapses are not unique to the for profit sector by any means. Charitable nonprofits entrusted with the care of the victims of Katrina, church leaders entrusted with the very souls of our young, and government lawmakers and servants in far away Iraq are just as susceptible to unethical and illegal lapses as the business leaders. The apparent epidemic of ethical breakdowns appears to be indiscriminant.
- Our cynical image of the ethics of the business world is further intensified by the entertainment industries portrayal of business behavior in such blockbuster hits as Erin Brockovich, Wall Street, Civil Action, Super Size Me, Client and of course Michigan's own Roger and Me.
- As benign as this may appear, this information, coupled with personal accounts from friends and relatives, has apparently left a significant imprint on students of business and other professions in the form of deep concerns and resignation about the ethical challenges they will face in their future careers. What disturbing is we are not just seeing

attitudes tinged with cynicism and, but apparently powerful paradigms and predispositions as to what they will encounter and how they will conduct themselves in the world of business.

Fueling these conclusions is a number of studies including:

- An Aspen Institute study of over 2,000 MBA students who graduated from 13 leading international business schools in 2001, found that a majority of MBA anticipated facing difficult values conflicts in their jobs. Most said they would leave a company whose values were inconsistent with their own rather than speak up or act to change the situation. (The Aspen Institute, 2002)

- Five (5) separate studies (appearing in the Journal of Ethics, Academy of Management Journal, and Personnel Administrator) conducted between 1968 and 1988 all found that majority of student respondents s believe that they will be expected to check their ethics at the corporate door and that if they don't they will be pressured to compromise their own ethical standards in order to succeed. (Wood et al., 1988; DeSalvia et. al, 1971; Lane et.al., 1988; Fulmer, 1968; Jones et. al. 1988)

- Hopefully longitudinal studies will shed light on whether these behavior intentions actually manifest themselves as actual behavior in the workplace, and what factors help to mediate their appearance.

I found this disturbing picture hard to believe until it was graphically demonstrated for me in class the other evening when a Muslim engineer and I ended up talking for an hour after class about the looming dilemma that he would soon have to face; He held the iron clad assumption that if he is successfully promoted to a group leader position in the coming months, he will be asked (forced) to abandon some of the most precious tenets of his religious teachings "to be successful in his new job". And what was even more revealing was that his assumptions were based on no specific information received from coworkers or other group leaders, and he had no idea – no strategy, tools or techniques he could site to resolve this conflict. He said he would simply "cross that bridge when he came to it."

If we are to be equipped to prepare students for the ethical challenges anticipated in the business world, and challenge some of these assumptions and predispositions, it behooves us as teachers, researchers and consultants to industry to gain as accurate picture of business practices as possible. (As my colleague Rush Kidder, president of the Institute for Global Ethics in Camden, Maine says in making the case for encouraging "ethical fitness": "We can't expect our young students to successfully jump the high ethical hurdles they will encounter in the work world, without first gradually building their ethical conditioning thru a series of smaller, more manageable jumps". I assume Rush's advice applies to all of us.)

How accurate are those perceptions of the ethical landscape in business? As you might imagine, reality is a mix of good and not so good.

Several surveys of ethical behavior in business confirm a significant amount of pressure to act unethically. Similarly, they confirm that employees regularly observe a high degree of significant misconduct among fellow workers.

- **The National Business Ethics Survey** conducted by Ethics Resource Center in 1994, 2000, 2003 and 2005 provides helpful benchmarks in terms of trends in some specific business behaviors (National Business Ethics Survey 1994-2005, 2006). For example; in their inaugural survey report from 1994 they noted that one third of over 5,000 respondents reported observing multiple acts of misconduct at work. These figures appear to be consistent over the past decade in NBE surveys, with about one third of the respondents reporting to have observed others engaging in significant unethical conduct ranging from lying, falsifying records, theft, harassment and withholding information in their workplaces in their 2000, 2003 and 2005 reports.

- Similarly the Accounting firm **KPMG 2005-6 / US Integrity Survey found** approximately 35% of respondents had observed misconduct "that could cause a significant loss of public trust" if discovered (2005-6 KPMG Business Ethics Report, 2007). This was the same as percentages reported in their 2000 survey. Most commonly reported behaviors included conflict of interest, issues with external relationships, handling company assets, customer

relations, relations with suppliers, relations with competitors, and employee and workplace issues (safety, hiring, promotion termination, privacy and harassment).

- The National Business Ethics Survey also reported that a large number of unethical incidents go unreported by employees (National Business Ethics Survey 1994-2005, 2006). In 1994, researchers reported that fewer than half of the incidents observed were reported by employees. Trends in this area however appear to be improving. By 2000 reported violations had grown to slightly over 50%, and by 2005, about 55% reported such incidents to management.

- NBES also reported that a majority of respondents in 1994 were dissatisfied with management response to the incidents reported (National Business Ethics Survey 1994-2005, 2006). In subsequent surveys this figure had drop to 40% of the respondents. Although significantly reduced, this issue remains a significant source of employee dissatisfaction likely contributing to low worker morale, and possibly turnover

- Encouraging is the news that the percentage of NBES respondents experiencing significant pressure to compromise their ethical standards to achieve business objectives had decreased from 33% in 1994 to half that number (16%) in 2000, further falling to 10% in 2003 and 2005 (National Business Ethics Survey 1994-2005, 2006) .

The literature is rich with strategies to enhance ethical behavior on the job.

During the past decade company sponsored initiatives have included several active approaches, including a proliferation in the number of companies with codes of conducts, (not unlike LTU's own Honor Code) policies defining ethical behavior, compliance and other forms of ethics training for business employees.

- For example, NBES respondents report an increase in number of written standards and codes of conduct in their companies from 67% in 1994 to 86% in 2005 (National Business Ethics Survey 1994-2005, 2006) .

- The NBES documented an increase in ethical awareness and compliance training programs of 32% points from 1994 to 2005 (National Business Ethics Survey 1994-2005, 2006).
- They also report that there has been an increase in the number of places to seek ethics advice within survey companies - up 15% points between 2000 and 2005 (National Business Ethics Survey 1994-2005, 2006).

Management of Behavior - There is a growing movement to add additional components to the campaign to increase corporate ethical behavior in the wake of little or no progress in decreasing the number of observed unethical acts in companies over the past ten years. Many of these additional layers help define what Trevino and Nelson (2007) referred to in their popular book Managing Business Ethics, Straight Talk About How to Do It Right as the behavior management approach to ethics in corporations. To these Penn State and University of Pennsylvania researchers, the answer to ethics violation is to take more aggressive steps to control the behavior. They believe that all systems of an organization need to be aligned to send a consistent message about right behavior, and must be vigilant to reward ethical behavior and apply consequences when employees misbehave (This includes mission and value statements, codes, strategic plan, Office of Ethics/officer, orientation / training that begins with moral awareness and decision making thru examples of ethical behavior, performance management programs (rewards and punishments), and ethics audits, which would include measurement evaluation, and recommendations for continuous improvement.)

- The adoption of such ethics behavior management approaches, however, has been slow to catch on as documented by a 2004 survey conducted by **Value Based Management Inc (2005).** They report that in contrast to the large number of companies offering ethics training, fewer than a third has a helpline or resource available to advise on ethics compliance issues. Only one quarter of the respondents indicated their companies had an ethics/compliance officer, and only 14% reported ethics/compliance measures in their performance appraisal system.
- The **NBES reports** that the evaluation of employee performances based on ethical conduct actually decreased by 7 percentage points between their 2003 and 2005 surveys (National Business Ethics Survey 1994-2005, 2006). Discipline of employees who violate

ethical stands has shown small percentage gains in recent years. Less than 25 % report their companies either coach or apply disciplinary action to employees guilty of ethics violations.

The NBES survey team concludes from its work on business ethics that on a national level formal programs are on the rise, but positive outcomes are not rising proportionately (National Business Ethics Survey 1994-2005, 2006). Formal ethics and compliance programs do have an impact on employee behavior, but it is moderated by organizational culture. Said another way, once a strong ethical culture is in place, formal programs formal programs do not have much incremental impact on outcomes. Growing attention to ethics and compliance must be supplemented by attention to organization culture – the norms, rules and models by which decisions are made and behavior guided in an organization.

And so, what if any implications can us as educators derive from this data? First, we must be wary of over generalizing the results of any of these studies. As the NBES survey work suggests, there are a number of variables to take into consideration when deciding which interventions yield positive results, and what unintended consequences might result from establishing formal programs. Nevertheless, the increased attention to ethical issues in business and organizational responses to ethical lapses suggest many avenues for guiding students and research in the area of business ethics. Students, universities, and accrediting bodies have all expressed a need to strengthen ethical education and action in our business schools and programs. This includes

- A growing cry for schools and researchers to survey students as to what they think they need to prepare them for the challenges of business.
- Frequent suggestions that we include more practical tools training for our business school students.
- Recommendations for both stand alone ethic courses, as well as the i-incorporation of ethical training across all core business courses
- The establishment of centers of ethics such as
    - **Rutgers – the Prudential Business Ethics center**
    - **Notre Dame Center for Ethics and Religious Values n Business**
    - **Duke Center for Leadership and Ethics**

We do not know where this national debate will come out on coursework most appropriate for B-schools in America and the role of and dedicated centers of ethics. But in closing let me share some thoughts - gleaned from my preparation for today - about steps we might consider taking as individuals to strengthen the ethical capacity/fitness of our students

- First, we can take it upon ourselves to help study, learn about, and clarify issues related to ethical issues and dilemmas in organizations today. We can explore techniques being piloted in today's organizations, documenting "best practices" and subject "promising practices" to rigorous study. In the process perhaps we can help clarify the snapshot of the business world , provide a more of a balanced scorecard on what students can expect in the world of business .

- Increase and intensify dialogue among ourselves about the best approaches for teaching character education at LTU. We can support intercollegiate discussion, such as the type we are engaged in here today, about the best means and measures for fostering character development and ethical behavior among our future leaders

- Expose our students to a broader menu of practical techniques and tools for confronting ethical dilemmas , including broad exposure to "what if" scenarios. We should expose students to a variety of decision models for breaking down ethical dilemmas in to bite size pieces to better be able to process and act upon the situation. These would include the Ohio State University "Roadmap of Ethical Considerations, provide to all OSU students at orientation. We can also explore methods to help shift the ethical paradigm from reactive to proactive to help change student paradigms of helplessness when confronted with ethical dilemmas,

- Look for those "teachable moments" both inside and outside of the classroom, to frame issues of ethics and model ethical behavior in response to them. A good example of this is the opportunities presented to us when advising students or talking with recent alumni about actual situations.

- Encourage and support the alignment of systems and practices within and across colleges here at LTU. We can encourage unified action to

support a culture of ethical behavior at LTU. For example, we could routinely support the LTU honor code by reporting violations to the dean of students.

In conclusion I again advise caution about over generalizing the admittedly incomplete information that currently exists about ethical behavior in the workplace. But hopefully, my comments have sparked some ideas worthy of further investigation or follow-up. I realize I have not shared sources or websites with you today for any of the points made here. I would be happy to do so if you would like, by sending me an e-mail at "Inskeep@ Ltu.edu." Thank you for your attention

Bibliography

Value Based Management. Compliance, Ethics and Enronitis Survey. 2005, www.valuesbasedmanagement.net/polls_ethics_complianc.html

DeSalvia, D.N., and Gemmill , G.R. 1971. An exploratory study of the personal value systems of students and managers. Academy of Management Journal 14: 247- 238.

Ethics Resource Center. 2006 National Business Ethics Survey 1994, 2000, 2003, 2005. Washington D.C.: Ethics Resource Center.

Fullmer R.M. 1968. Business Ethics: A view from the campus. Personnel Administrator 45 (2): 31-39.

Jones, T.M. and Gautischi, F.H. 1988. Will the Ethics of Business Change? Journal of Business Ethics 7: 231-248.

KPMG International. 2005-6 KPMG Business Ethics Report, 2007. Luxemburg.

Lane, M.S., Schaupp, D. and Parsons B. 1988. Pygmalion effect. Journal of Business Ethics 7 223-229.

Trevino, Linda K., and Nelson, Katherine A.; Managing Business Ethics, Straight Talk About How to Do It Right, 2007, Fourth Edition. Hoboken, NJ: John Wiley and Son, Inc.

Wood, J.A., Longnecker, J.G., McKinney, J.A., and Moore, C.W. 1988. Ethical Attitudes of students and business professionals: A study of moral reasoning. Journal of Business Ethics 7: 249-257.

Professional Ethics and Values in Architecture and Design Professions

Dr. Dan Faoro (College of Architecture and Design)

University Assessment Seminar 2006/2007.

LAWRENCE TECHNOLOGICAL UNIVERSITY
September 21, 2007. LTU Campus, Lear Auditorium.

Ethics in Architecture, Planning and Design and the Arts.

Daniel L. Faoro, RA, AIA, M.ARCH/UD, Associate Professor, COAD.

Background: He has co-authored a short monograph on professional ethics, with Dr. Sarah Bishop-Merril, Ph.D. at Kansas State University, (1989) and completed peer reviewed published research on applied ethics in architecture, in *The Journal of Architecture and Planning Research* 7.3 Autumn (1990), *"The New Architectural Ethics Responding to Ethical Stress in Practice from Changing Roles in Practice."* Their work is cited in *Ethics and The Practice of Architecture,* (2000) Barry Wasserman, Patrick Sullivan, Gregory Palermo.

General Precepts of Ethics.

1. What is the 'good' toward which we ought to be moving- *(this denotes a "progressive" social and political orientation, i.e. present conditions are not desired and need to change.)*

2. What principles should we arrive at in our thinking. *(Principle centered actions, what we "ought to do"the primary orientation of the baby boom orientation).*

3. How do we arrive at justice and fairness in our dealings with others and they towards us? *(values orientation- equity and equality or egalitarian views).*

4. What is the close relationship of our duties toward ourselves and those close to us and those to the larger communal benefit.
(duty based system, view the rightness of actions based on collective benefit)

Ethics and The Practice of Architecture, (2000) Barry Wasserman, Patrick Sullivan, Gregory Palermo. Pp.29 (comments by author)

Characteristics of a Profession.

In a speech, "Is Social Work a Profession?" delivered at the 1915 meeting of the Baltimore Conference on Charities and Correction, Abraham Flexner concluded that social work was in the beginning stages of professionalization, but was not yet a profession, his argument in principle was based on concerns if social science was a legitimate science.

□professions involve essentially intellectual operations with large individual responsibility;
□they derive their raw material from science and learning;
□this material they work up to a practical and definite end;
□they possess an educationally communicable technique;
□they tend to self-organization;
□they are becoming increasingly altruistic in motivation. . . ."

James M. Gustafson, a well known published author of ethics, described a profession as follows:

A profession is characterized by mastery of an extensive body of technical knowledge and concepts or theories that explain that knowledge and guide its applications to different circumstances.

Professions are institutionalized, and thus there are many social controls over professional activity.

Professions are service oriented. They exist to meet particular human needs of individuals and communities.

University of Maryland http://medschool.umaryland.edu/catalog/academic_equal.asp

Physical Science and Design Science:

Sir Arthur Eddington, one of the great theoretical physicists in the first half of the 20th century, defined science simply as "the conscientious attempt to set in order the facts of experience" (Puller, 1976, p. 7). A similar definition was provided by the highly acclaimed Viennese physicist, Ernst Mach who said "Physics is experience arranged in the most economical order" (Puller, p. 7). Mach's definition incorporated the discoveries of physicists that nature always works in the most economical way possible. These definitions were used by Ramsay to define "social work as the conscientious attempt to set the facts of experience in the most economical socialization order." Social work was recognized as part of "design science" (Gabel, 1979), a new paradigm for viewing our world that emerged out of Puller's work. Gabel explained that "design science sees the environment and the human condition as being ever improvable . . . [which] involves understanding the critical interrelated nature of our problems and their global scope, the inability of present, locally focused planning methods to deal effectively with these problems, and new systematic alternative approaches for recognizing, resolving, and preventing our present and anticipated problems through the development of artifacts" (pp.10-11). We learned that design science unlike "pure" science which often claims to be value-free is value-laden. Design involves the structuring of environments in preferred directions, where we want to go is determined by our values (Gabel, p. 11). Most importantly for social work, Gabel pointed out that. One of the underlying tenents of design science is that we are all in 'this' together, 'this' being the Earth, humanity, and our innumerable problems. Problems are all interconnected just as is our ecology. Problems are parts, design science seeks to deal with wholes, with systems. The method of design science is one of always starting with the whole and working toward the particular (p. 11).

One essential argument by secular physical scientists with regard to the problem with design science or " intelligent design " are two fold.

1. Values-based outcomes are not objective and less likely to reveal truth, or discovery of new knowledge, because they are not based on measurable facts but presumptions.
2.They assert that design science includes the presence of an omnipotent force (God). In a scientific experiment it is impossible to remove the effects of "God-in the experiment" thus the impact of God cannot be measured.

Critics of theoretical and pure sciences claim that their research also has objectives, i.e., experiments are constructed to examine their hypothesis.

IS SOCIAL WORK A PROFESSION?: A 21ST CENTURY ANSWER TO A 20TH CENTURY .(Excerpts from a futurist paper written by Professor R. Ramsay in 1989) .http://members.tripod.com/~Tetworld/ihp6.html.

- Attributes of a Profession (Ernest Greenwood in 1957) :
-
- A systematic body of knowledge
- Professional authority and credibility
- Regulation and control of members
- A professional code of ethics
- A culture of values, norms, and symbols

History of Social Welfare, Dr. Osei Darkwa , Univ. of Illinois at Chicago.
http://www.uic.edu/classes/socw/socw550/HISWEL/tsld001.htm

Making a sword is a technical problem of craft. What to do with the sword is an ethical problem.
David Watkin author, *Morality in Architecture*, Architectural Historian.

American Institute of Architects Code of Ethics. v. 2004:

Canon I. General Obligations:

A. Improve Knowledge and skill.
B. Elevate standards of excellence.
C. Respect for natural/cultural heritage.
D. Uphold Human Rights.
E. Not discriminate in services, race, religion, national origin, gender, age, disability or sexual orientation.

Canon II. Obligations to the Public.

A. Do not violate the law.
B. Safeguard public safety; **health, safety and general welfare.**
C. Offer no bribes or attempts to influence judgement of an elected official.
D. Serve the public interest.
E. Engagement in Civic activities.

American Institute of Architects Code of Ethics. 2004:

Canon III. Obligations to the Client:

A. Competence/timely service.
B. Avoid and disclose conflicts of interest.
C. Candor and truthfulness in communications.

Canon IV. Obligations to the Profession.

A. Maintain Honesty and Fairness.
B. Uphold the dignity and integrity of the profession.

Canon V. Obligations to Colleagues.
A. Provide fair compensation, quality work environment, facilitate professional development.
B. Mentor and develop fellow practioners.
C. Recognition based on merits of service and give credit to others

Oversight by the National Ethics Council.
Penalties involve, admonition-termination of membership

American Society of Interior Designers Code of Ethics. 2006:

Responsibilities to the Public.

A. Do not violate the law.
B. Safeguard public safety, health, safety and general welfare.
C. Offer no bribes or attempts to influence judgement of an elected official.
D. No false advertising.
E. No aiding or abetting those engaged in illegal activities.

Responsibilities to the Client:

A. Define the scope of services.
B. Competence/timely service.
C. Disclose means of compensation.
D. Maintain Confidentiality.
E. Candor and truthfulness in communications
F. Demonstrate fiscal responsibility.

American Society of Interior Designers Code of Ethics. 2006:

Responsibilities to Colleagues and other Interior designers.

A. Do not interfere with others client contracts.
B. No unjust damage the reputation of others.
C. Only those who are AISD members may claim the affiliation.
D. Give credit to others.
E. Maintain confidential information.

Responsibilities to the Profession:

A. Maintain standards of the Profession.
B. Seek to improve skills and knowledge.
C. Share knowledge with others.

Responsibility to the employer.

A. Do not take work of employer if you leave.
B. Employers shall not unreasonably retain rights to work.
C. Do not divulge confidential information.

Enforcement of Code.
A disciplinary committee is formed to rule on violations. Disciplinary action may be public, cannot require payment of monetary damages.

American Institute of Certified Planners Code of Ethics. 6/2005:

I. Overall Responsibilities to the Public.

A. Concern for long range consequences, rights of others, citizen participation, seek social justice, fairness in relationships.
B.Provide timely , adequate, and accurate information, promote excellence in design by preserving the heritage and integrity of the natural environment.

II. Responsibilities to Clients and Employers.

A. Use independent ,professional judgement on their behalf.
B. Accept the decisions of the client/employer, unless illegal or inconsistent with public interest.
C. Avoid conflicts of interest.

Responsibilities to Profession and Colleagues

A. Protect Integrity of the profession, educate the public.
B. Fair and professional criticism of other peers.
C. Share knowledge with others, and study standard practice for applicability to a particular situation.
D. Enhance knowledge and training.
E. Extend assistance to develop others in their profession.
F. Systematically analyze ethical issues.
G. Provide assistance to groups who lack resources for representation.
H. Increase the number of under represented groups in the field.

American Institute of Certified Planners Code of Ethics. 6/2005:

I. Rules of Conduct.

A. Provide timely, accurate information,service.
B. No engagement in illegal activities.
C. Do not engage in assignments which are counter to prior client advocacy activities. Within three years and with deliberation and good faith that it would not impact negatively prior client commitments, and require disclosure.
D. Must seek permission to engage in additional consulting services beyond primary employer.
E. If under public employment may not accept payment form another public client.
F. Must avoid indirect financial gains in services provided.
G. Shall not use for personal gain nor disclose information obtained in confidence form clients.
H. For public projects must avoid private communications.
I. Must not misrepresent findings of work, must not falsify credentials.
J. May not solicit clients through false claims, harassment, or duress.
K. Shall not use power of their office to seek advantage.
L. Accept work we are competent to provide only provide services in a timely manner.
M. Must not accept credit for work of other professionals.
N. Must not direct, coerce professionals to provide findings not consent with evidence.
O. Must disclose the interest of our clients in the planning process.
P. Must not unlawfully discriminate against others.
Q. Must not withhold information from AICP Ethics officers, must not threaten retaliation against another for filing an ethics violation, nor file a frivolous charge of ethical misconduct or use threat of filing an ethics charge to gain advantage.
R. Must not engage in any act outside of the Rules of Conduct that reflects on our professional fitness.

American Society of Landscape Architects Code of Ethics. v.2007.

Dedicated to the public safety, healthy and general welfare and recognition of the land and protection of its resources.

Canon I . Professional Responsibility.

A. Do not violate the law, Honesty, dignity, and integrity in professional practice,.
B. If a public employee must not engage in private contracts with the same agency.
C. Offer no bribes or attempts to influence judgement of an elected official.
D. Provide recognition and credit of others contributions
E. No misleading advertising on results of prior services.
F. Can accept compensation for only one party on a project unless approved.
E. Maintain Confidentiality of client information unless it will compromise public, health, safety or violate the law.
F. Candor and truthfulness in communications.
G. Respect Copyrighted works.
H. Anti supplanting provisions, cannot seek contracts already awarded to *other members.*
I. Cannot seek contracts from agencies in which you have been an unpaid advisor, unless your removed from the selection process.

American Society of Landscape Architects Code of Ethics. v.2007.

Dedicated to the public safety, health and general welfare and recognition of the land and protection of its resources.

Canon I . Professional Responsibility.

J. Members should seek to make full disclosure of relevant information to all parties.
K. If making public statements members shall disclose if fees are paid.
L. In solicitation phases must make full disclosure on staff qualifications, insurance etc…
M. Must disclose to clients factors that effect services rendered, and convey to clients their capacity to perform the work.
N. Must be qualified to perform work and not seal drawings done by others outside of their supervision.
O. Members should seek to improve aesthetic, ecological and cultural excellence through continuing education.
P. Controversial projects should engage client discussions on factual, issue-oriented basis.

American Society of Landscape Architects (ASLA) Code of Ethics. v.2007.

Canon II . Member Responsibility.

A. Members should uphold Ethical Standards, and enforce, educate standards by employees and peers.

B. ASLA Seal shall only be used by members.

C. Members are encouraged to serve on public boards dealing with land-use, arts and environmental issues. They should avoid conflicts of interest when serving on these boards.

Rules and procedures for filing complaints.

ASLA Code of Environmental Ethics:

Members should enhance, respect, restore the life-sustaining integrity of the landscape and all living things for present and future generations and encourage environmental stewardship to maintain a healthy environment and quality of life for the earth.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

CODE OF ETHICS, v. 2007

As members of a Society we are"organized and operated for the exclusive purpose of advancing the arts and sciences of heating, refrigeration, air conditioning, and ventilation, the allied arts and sciences, and related human factors for the benefit of the general public,"

We pledge to act with honesty, fairness, courtesy, competence and integrity and respect for others in our conduct.

Our efforts shall be directed at all times to the enhancement of the public health, safety and welfare. We shall act with care and competence in all activities, using and developing up to date knowledge and skills.

Our products and services shall be offered only in areas where our competence and expertise can satisfy the public need.

Our public statements shall be issued only in an objective and truthful manner.

We shall avoid real or perceived conflicts of interest whenever possible, and disclose them to affected parties when they do exist.

The confidentiality of clients' and employers' business affairs, proprietary information, intellectual property ,procedures and restricted Society discussions and materials shall be respected.

Applied Design Associations that Promulgate Codes of Ethics:

Model Code of Professional Conduct for Designers (1987). Published by the International Council of Graphic Design Associations.(ICOGRADA).

International Council of Societies of Industrial Design (ICSID).

International Federation of Interior Architects / Interior designers. (IFI)

American Institute of Graphics Arts Code of Ethics.

Statement of policy on professional practices .
Purpose

The purpose of the statement of policy on professional practices is to provide all American Institute of Graphics Arts members with a clear standard of professional conduct. The AIGA encourages the highest Level of professional conduct in design. However the policy is not binding. Rather, it reflects the view of the AIGA on the kind of conduct that is in the best interest of the profession, clients, and the public.

For the purposes of this document the word "designer" means an individual, practicing design as a freelance or salaried graphic designer, or group of designers acting in partnership or other form of association.

The designer's professional responsibility

1.1 A designer shall at all times act in a way which supports the aims of the AIGA and its members, and encourages the highest standards of design and professionalism.

1.2 A designer shall not undertake, within the context of his or her professional practice, any activity that will compromise his or her status as a professional consultant.

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http://ethics.iit.edu/codes/coe/amer.inst.graphic.arts.statement.policy.pro.practices.html

The designer 's responsibility to clients

2.1 A designer shall acquaint himself or herself with a client's business and design standards and shall act in the client's best interest within the limits of professional responsibility.

2.2 A designer shall not work simultaneously on assignments which create a conflict of interest without agreement of the clients or employers concerned, except in specific cases where it is the convention of a particular trade for a designer to work at the same time for various competitors.

2.3 A designer shall treat all work in progress prior to the completion of a project and all knowledge of a client's intentions, production methods and business organization as confidential and shall not divulge such information in any manner whatsoever without the consent of the client. It is the designer's responsibility to ensure that all staff members act accordingly.

The designer 's responsibility to other designers

3.1 Designers in pursuit of business opportunities should support fair and open competition based upon professional merit.

3.2 A designer shall not knowingly accept any professional assignment on which another designer has been or is working without notifying the other designer or until he or she is satisfied that any previous appointments have been properly terminated and that all materials relevant to the continuation of the project are the clear property of the client.

3.3 A designer must not attempt, directly or indirectly, to supplant another designer through unfair means; nor must he or she compete with another designer by means of unethical inducements.

3.4 A designer must be fair in criticism and shall not denigrate the work or reputation of a fellow designer.

3.5 A designer shall not accept instructions from a client which involve infringement of another person's property rights without permissions, or consciously act in any manner involving any such infringement.

3.6 A designer working in a country other than his or her own shall observe the relevant Code of Conduct of the national society concerned.

Fees

4.1 A designer shall not undertake any work for a client without adequate compensation, except with respect to work for charitable or non-profit organizations.

4.2 A designer shall not undertake any speculative projects either alone or in competition with other designers for which compensation will only be received if a design is accepted or used. This applies not only to entire projects but also to preliminary schematic proposals.

4.5 A designer shall work only for a fee, a royalty, salary or other agreed upon form of compensation. A designer shall not retain any kickbacks, hidden discounts, commission, allowances or payment in kind from contractors or suppliers.

4.4 A reasonable handling and administration charge may be added, with the knowledge and understanding of the client, as a percentage to all reimbursable items, billable to a client, that pass through the designer's account.

4.5 A designer who is financially concerned with any suppliers which may benefit from any recommendations made by the designer in the course of a project shall secure the approval of the client or employer of this fact in advance.

4.6 A designer who is asked to advise on the selection of designers or the consultants shall not base such advice in the receipt of payment from the designer or consultants recommended.

Publicity

5.1 Any self-promotion, advertising, or publicity must not contain deliberate misstatements of competence, experience or professional capabilities. It must be fair both to clients and other designers.

5.2 A designer may allow a client to use his or her name for the promotion of work designed or services provided but only in a manner which is appropriate to the status of the profession.

Authorship

6.1 A designer shall not claim sole credit for a design on which other designers have collaborated.

6.2 When not the sole author of a design, it is incumbent upon a designer to clearly identify his or her specific responsibilities or involvement with the design. Examples of such work may not be used for publicity, display or portfolio samples without clear identification of precise areas of authorship.

This document is based on the Code of Ethics and Professional Conduct published by the International Council of Graphic Design Associations (ICOGRADA). The AIGA Statement of Policy on Professional Practices is intended to conform with the ICOGRADA code, while at the same time clarifying its meaning and content in the context of U.S. practice.

Revised 7/96

Subsequent Revisions to the Code:

Sections added on copyright, use of fonts, working with photographers, human rights and sustainability.

Sustainability:
There are four essential aspects of recycling:
The design of products that use less virgin material and that themselves can be recycled The manufacture of these materials into new recyclable products The collection and processing of recyclable materials The specification, purchase and use of recycled-content products

Human Rights:

On December 10, 1948 the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights, The Assembly called upon all Member countries to publicize the text of the Declaration and "to cause it to be disseminated, displayed, read and expounded principally in schools and other educational institutions, without distinction based on the political status of countries or territories."

AIGA's board of directors adopted the Universal Declaration of Human Rights in January 2006.

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http://www.aiga.org/content.cfm/design-business-and-ethics

Ethical Issues in the Arts.

Artists are often excluded from normative moral based judgements, they are recognized based on their talents and success as an artist not on their personal life or political affiliations.

The primary purpose of art is individual expression and communication with the significance of the work related to the social, political or environmental commentary on the human condition, the technical skill displayed, and the innovation and originality displayed in the work. Since the 1960's the importance of the conceptual basis of art has increased where social relevance replaces beauty. [1]

The process of making pure or fine art was distinguished from 'craft' by R.G. Collingwood who stated that a craftsman starts with an intended outcome, artists in contrast start the creative process unaware of where it will lead them.

Simone Weil stated that a work of art has an ethical dimension when it promotes 'otherness' or inspires the viewer to think of someone other than themself.

1. See lecture by Elanie Scarry at Yale University 1998, http://www.tannerlectures.utah.edu/lectures/scarry00.pdf

No society licenses it's artists.

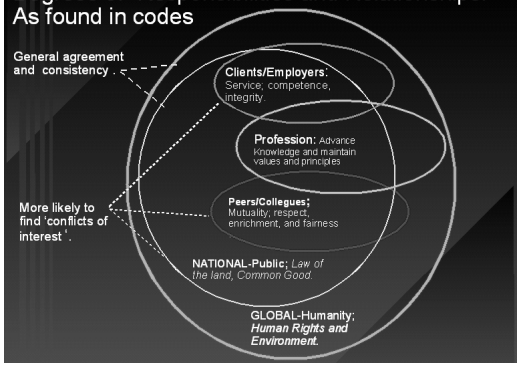
Andrew Seidel, Ph.D.
Editor, Journal of Architecture and Planning Research

The Austrian Philosopher Ludwig Wittengenstein stated that art and ethics are enterprises that are viewed as *sub specie aeternitatis* (under the aspect of eternity).

The Yard, 1961 by Allan Kaprow, Installation , Martha Jackson Gallery, New York, 1961.

Source:http://www.artnet.com/magazine/features/kuspit/kuspit4-20-19.asp

Degrees of Responsibilities and Relationships. As found in codes



Common Values/Principles of Conduct.

A. Uphold the values and principles of the profession, be effective and competent and improve the overall quality of services.

B. Most adhere to some value-based concepts of improving the quality of life of clients, the public, and users by their services. These are expressed "health, safety, general welfare," utility, human rights, social justice, equity, equality, accessibility, environmental stewardship, and aesthetic quality.

C. Respect for the laws of the nation, additional concerns when serving as a public official or serving a public agency.

D. Respect for peers and affiliated industries and professions, engage in fair play, avoid conflicts of interest, demonstrate dignity, honesty, good faith and integrity in personal and fiscal matters.

E. Rules for violations, punishment, and enforcement of their code.

The capacity for leadership is directly related to one's capacity for service.

Walter Gropius, Architect Founder of Bauhaus Academy.

Emerging Issues in Ethical Conduct and Codes:

Globalization and International Services.

Environmental and ecologically responsive concerns impact practice and assessment of environmental costs.
Human rights in "fair trade practices", and outsourcing of services .
Conflicts occur when concepts of human rights differ based on varying cultures, customs, and social norms as a result of global services and trade.

National Laws.

Societal responsibilities, rights, and laws now inclusive of varying groups. Emerging rights expanded to individuals based on physical or cognitive disabilities, age/elderly, sexual orientation, gender, economic class ,race and 'under represented groups". Emerging state laws that prevent intimidation and harassment of employees in the workplace.

Profession.

In architecture the reduction of professional discretion in design projects due in part to an increase in complexity of design objectives and demands for measurable performance based outcomes.

Increase in other fields competing for professional stature and ability to provide competing services, interior design, landscape architecture, planning.

Environmental performance requirements for buildings are ever increasing and metrics for measurements (LEED) with an increase in service costs for meeting these standards.

Increase demand for software to analyze performance and be interoperable with engineering software (BIM).

Increase demand for citizen participation, and community approvals in design review. Communities adopting performance based zoning codes .

Practice /Client Relationships:

"Comodification" of professional services and deprofessionalization, emphasis on cost not quality of service and standards of care. In architecture , there are ethics based challenges regarding duties to clients vs. public.
Professions now regarded as 'profit centered or commercial business', not service centered non-profit vocations. Owners and investors attempt to profit from the time based service of employees in professional service firms.
Professional firms now have a financial interest in commercial firms that they refer their clients/patients to.
Allowance for advertising, imposed restrictions on fee schedules, supplanting, and conflicts of interest are now allowed if disclosed. Emergence of architect as contractor or client in design build services. Solicitation and selection of firms based on design competitions.

Peer Relationships:

In architecture there is a decrease in comprehensive services. Increasing practice based specialization and more joint or sub contractual relationships for services. A substantial increase in team based projects.

The essential question in ethics according Robert Putnam, author of *Bowling Alone in America*, is what kind of society / world do we want to live in?

World Hunger and Poverty:

The GDP of the the poorest 48 nations (25% of the world's countries) is less than the wealth of the worlds three richest people combined. (UNDP)

In developed countries, more than 100 million people live in poverty , more than 5 million are homeless and 37 million are jobless (UNDP).

180 Million children worldwide , or one in eight children is engaged in child labor, (UNICEF).

More than 130 million children (73 million are female) under the age of 12 are growing up without an education. (UNICEF).

800 million people in developing countries are hungry and malnurished. (UNWFP)
11 million young children die each year (one in every five seconds) , more than half from hunger related causes. (FAOUN)

17% of the world's population consumes 80% of the world's resources (UNDP)

Water and Health.

12 million people die each year from lack of access to clean water. (UNICEF)

SOURCES: DATA as of March, 2006.
United Nations Human Development Program (UNDP).
The United Nations Childrens Fund (UNICEF).
Food and Agriculture Organization of the United Nations (FAOUN)
World Health Organization (WHO)
United Nations World Food Program (UNWFP)

HIV and AIDS.

In 2004 4.9 million people became infected with AIDS and 3.1 million died from it. 13% were age 14 or younger while 25% were pregnant women. (WHO)

Human Trafficking:

Each year 600,000 - 800,000 people are forced into labor or sexual explotation, mostly women and children are trafficked across boarders . It is estimated that 700,000-2 million people will become vicims of human trafficing annualy sold into forced labor, sexual exploitation, or slavery, (UNPF)

Children are often trafficked to work in sweat shops as bonded labor and men work illegally in jobs described as dirty, difficult and dangerous, (UNDOC)

Refugees and Displaced Persons:

There are 10 million refugees worldwide. (UNHCR)

There are 25 million internally displaced persons globally. (UNICEF)

United Nations High Commission on refugees (UNHCR).
The United Nations Childrens Fund (UNICEF).
United Nations Office on Drugs and Crime (UNDOC)
United Nations Population Fund (UNPF)

Great learning and superior abilities will be of little value...unless virtue, truth and integrity are added to them.

Abigail Adams

RESOURCES: SERVICE LEARNING/CHARACTER EDUCATION/ASSESSMENT.

SERVICE LEARNING ASSESSMENT:

http://www.servicelearning.org/lib_svcs/bibs/he_bibs/assess_eval/
1.Assessment, Evaluation, and Performance Measurement: Selected Resources

http://app1003.lsu.edu/slas/cas.nsf/$Content/Service-Learning+Assessment?OpenDocument
2.In 2001-02 the Service-Learning Assessment Committee, chaired by Bobby Mathews, Director of the LSU Center for Assessment and Evaluation, conducted a preliminary overall assessment of LSU's commitment to service. This first evaluation was based on Barbara Holland's grid "Levels of Commitment to Service, Characterized by Key Organizational Factors Evidencing Relevance to Institutional Mission." Then, triangulating syllabus analysis, faculty focus sessions, and faculty reports analysis, the committee determined that the service-learning components of courses awarded incentive grants were generally in line with best practices as indicated by the mission statement of the Service-Learning Council. The results of the 2001-02 report were used to revise the next rfp and planning process for 2002-03. The results were also shared with grantees and other faculty, both current service-learning faculty and those planning new courses, thereby shaping current and proposed courses. In addition, a $5,000 Faculty Fellow was established to deepen the level of S-L scholarship at LSU and to mentor other faculty regarding nationally accepted best practices and results of our own assessments.

http://www.provost.cmich.edu/assessment/posters/Assessment%20for%20Service%20Learning.pdf
3.Assessment Model for Service Learning: Comprehensive ... Gelmon, S. B. "Assessment as a Means of Building Service-Learning Partnerships.

http://www.northern.edu/aslp/authentic.html
4. Authentic assessment is a crucial component of service-learning projects. ... Integrating students learning assessments and service-learning helps in the ...

CHARACTER EDUCATION.

International Center for Character Education University of San Diego Division of Continuing Education-22
5998 Alcala Park, San Diego, CA 92110-2492. Phone: (619) 260-5980, Fax: (619) 260-7480 Web site: www.teachvalues.org

Center for the Advancement of Ethics and Character, Boston University
605 Commonwealth Ave., Boston, MA 02215
Director: Dr. Karen E. Bohlin. Phone: (617) 353-3262. Fax: (617) 353-4351. Web site: www.bu.edu/education/caec/

Center for the 4th and 5th Rs,Dr. Thomas Lickona, author of Educating for Character, educator
State University College at Cortland, PO Box 2000, Cortland, NY 13045
Phone: (607) 753-2455. Fax: (607) 753-5980. Web Site: www.cortland.edu/character/

http://www.uni-konstanz.de/ag-moral/mut/mjt-engl.htm#measure
1. MORALJUDGEMENT TESTmf. Dr. Georg Lin,University of Konstanz. The MJT measures two aspects of judgment behavior, a) moral judgment competence as defined by Kohlberg (1964; see also Lind, in press; Lind, 2006), and b) moral orientations or moral preferences as defined by Kohlberg's Stages of Moral Orientation. In contrast to the Kohlberg's Moral Judgment Interview, the MJT measures both basic aspects, the cognitive and the affective, simultaneously but independently, and thus does not give a mixed Stage score. The MJT is the only test which provides measures for these two aspects. While there are many tests of moral preferences or attitudes, it is one of the few, if not the only, measurement instrument which contains a real moral task for the participant. The task is to listen to and evaluated moral arguments about a moral dilemma, especially arguments which oppose his or her stance of the dilemma. For nearly all participants this is a difficult, if not very difficult task. *Only a very few respondents get a maximum score of one hundred; even most university graduates get a score below 45.*

http://www.collegevalues.org/pdfs/Arroyo-Selig.pdf
2. Regent University School of Education Differential Assessment and Development of Character Florida State University Tallahassee, Florida February 4-7, 2004

http://www.servicelearning.org/resources/fact_sheets/k-12_facts/char_ed/
3.International Center for Character Education University of San Diego ..... Online Database of Assessment Tools (Assessment Index).

http://www.ecs.org/qna/docs/climate_assessment_info.pdf
4.hool-wide climate assessment to help meet this need. ... Washington, DC: Character Education Partnership. Civic Missions of Schools (2005). ...

http://www.ncpublicschools.org/charactereducation/handbook/html/p108.html
5.Survey instrument

FUNDING SOURCES:

http://www.teaglefoundation.org/grantmaking/grantees.aspx#outcomes
Teagle FoundationThe Foundation currently makes grants in higher education, soliciting proposals in areas of interest to us from time to time. We have focused our grantmaking here in these major areas:

The Teagle Foundation is giving high priority to systematic assessment of the outcomes achieved in courses, institutions, and whole sectors of higher education. While colleges already expend great effort in assessing what they do, through such means as teaching evaluations and program reviews, the systematic measurement of the value added in various settings of higher education is an area in which more can be done. Nothing, we believe, has more potential to affect students' educational experience as much as sustained and appropriate assessment of what they learn. Our approach to assessment-which was shaped in part by Listenings with college and university leaders-begins with helping teachers in the classroom develop better models of how students learn and how specific academic disciplines can measure outcomes. To this end, the Foundation has made several rounds of grants that support faculty-driven, ground-up assessment of student learning. For more information on value-added assessment, see our Resources page.

The Annenberg Foundation.

The Kellog Foundation

2. Assessment of Student Writing

Critical thinking is a core competence addressed in Goal II. 5 of Lawrence Tech's educational goals:

"II. 1. Graduates will be skilled in written and oral communication."

This year, the assessment of student writing was carried out in two ways: a direct assessment of student writing samples (a repetition of the original assessment of 2003), and a comprehensive review of the Writing Proficiency Exam program.

Writing Proficiency Exam Program Review

The purpose of reviewing the WPE program was to provide a context in which the results of the writing sample assessment could be interpreted. Of particular interest were such questions as:

- When students take the WPE
- Passing rates on one and two tries
- How many students need to take the "refresher" course, COM3102, as a result of not passing the WPE in two tries
- Whether the WPE is functioning properly as a prerequisite for the humanities elective course in the Engineering programs

A secondary purpose was to generate recommendations that would help the WPE program function better.

This review was carried out by a committee composed of: Dr. Walter Dean (Director of Assessment); Dr. Harold Hotelling (representing the Department of Humanities, Social Sciences, and Communications), and Mary Thomas (Director of Institutional Research and Academic Planning). Its report follows.

Closing the Loop on the Writing Improvement Program
A Comprehensive Review: September 2007

History and Administration of the Writing Improvement Program and the Writing Proficiency Exam

The Writing Improvement Program was instituted in response to a perception that many LTU graduates had weak writing skills. Faculty in upper-division courses often commented on this, and surveys of employers of LTU graduates also reported that the writing skills of their LTU alumni (and more generally, their communication skills) were inadequate; this was seen as retarding their professional advancement.

The Writing Improvement Program has several components:

- A consensus among the Faculty that an effort should be made to improve student writing by requiring more writing and by raising the standards for acceptable writing.

- Agreed-on standards for student writing, in the form of a model writing assessment rubric, prepared by the faculty of the Department of Humanities, Social Sciences, and Communications. Locally-modified versions of this rubric were to be used for assessing all writing assignments in every department. For some time this rubric was distributed to all faculty members at the beginning of every Fall and Spring term; lately this practice seems to have fallen into abeyance.

- Support for this program is provided by an already-existing Writing Clinic, offered to students by the Academic Achievement Center. The Clinic is offered directly to students and also as a Faculty resource. Faculty members have been consistently reminded that it is not the intention to increase their workload by expecting them to grade inferior writing assignments in detail. Rather, such assignments should be returned to the student with directions to take it to the Writing Clinic operated as part of the Academic Achievement Center for assistance before resubmitting the assignment.

- Finally, the Writing Improvement Program was supported by a new graduation requirement: passage of the Writing Proficiency Exam.

The Writing Proficiency Exam (WPE) proposed as a way to ensure that every LTU student would experience a high-stakes test of their writing skills, late in the curriculum, that would serve both as a gateway graduation requirement and as an opportunity to brush up these skills before taking the required Junior-Senior humanities elective course. Once fully phased in, the WPE has been administered as follows:

- The WPE is configured as a course requirement (COM3000) so that it can be a pre-requisite for all courses satisfying the Junior-Senior humanities elective requirement.

- The WPE was originally intended to be taken as soon as possible after a student has 55 semester hours credit; later this was changed to 60 hours because Banner can base actions on class standing (60 hours for Junior standing) but not the number of credit hours as such.

- Students are given three "prompts" or suggested topics for their writing sample, from which they may choose any one. An effort is made to choose prompts on subjects that LTU students might reasonably be expected to have some knowledge, interest, and viewpoint.

- Writing samples are assessed using a rubric by a panel of English Composition faculty. Each sample is read by two readers. If the two evaluations agree, they are averaged; if not, the sample is evaluated by a third reader.

- If a student does not pass the WPE on the first attempt, he/she must repeat the WPE. If a student does not pass the WPE on the second attempt, he/she must take a "refresher" course, COM3102. Passing this course is equivalent to passing the WPE. A student who reaches this point must repeat COM3102 until they pass it, to satisfy the WPE requirement for graduation.

One problem identified rather early by the Writing Improvement Program "loop-closing" committee was that the rubric used by readers to evaluate the WPE writing samples was not the same as the rubric distributed to the faculty. The former puts more emphasis on the quality of the ideas presented in the sample, and how they are organized and developed. The latter stresses the "mechanics" of writing: spelling, grammar, the "banned error list" and the "list of small common mistakes" (these lists being standards used in LTU's English Composition course, COM1003). Within the committee, it was acknowledged that both are important components of good writing, but there was divergence of opinion concerning which should have primacy for the purposes of the WPE.

There is also some reason to believe that different WPE graders use the rubric in different ways, leading to inconsistencies in the ways that writing samples are evaluated and correspondingly different outcomes. Although the practice of having each paper evaluated by two graders helps mitigate this, it does not eliminate the problem, and probably some needless tiebreaking results that would be unnecessary if standards were more consistently applied.

Pass Rate Statistics

Central to the question of the efficacy of the Writing Proficiency Exam is rate at which students pass the exam. We have studied this in some detail.

First, we looked at the histories of all students who attempted the WPE prior to 1 September 2007 (Cohort 200730, 536 students). As of that date, their histories were:

Passed WPE on 1st attempt:	410 (76.5%)
Passed WPE on 2nd attempt:	61 (11.4%)
Passed COM3102:	5 (0.9%)
Failed WPE once, no further action:	58 (10.8%)
Failed WPE twice, no further action:	2 (0.4%)
Overall pass rate as of 1 Sep 2007:	476 (88.8%)
Unresolved:	60 (11.2%)

The status cases unresolved as of 1 September 2007 was then determined as of 1 September 2008:

Passed WPE on 2nd attempt:	18 (3.4%)
Passed COM3102:	3 (0.6%)
Still unresolved:	39 (7.3%)
Overall pass rate as of 1 Sep 2008:	497 (92.7%)

Finally, we looked at the enrollment status of the 39 students who remained unresolved:

Enrolled in COM3102	1 (0.2%)
Enrolled, but not in COM3102:	13 (2.4%)
Not enrolled (reason not known):	25 (4.7%)

We also looked at the pass rate statistics of those students who attempted the WPE for the first time between 1 September 2007 and 1 September 2008 (Cohort 200830, 411 students):

Passed WPE on 1st attempt:	321 (78.1%%)
Passed WPE on 2nd attempt:	33 (8.0%)
Passed COM3102:	5 (1.2%)
Failed WPE once, no further action:	48 (11.7%)
Failed WPE twice, no further action:	3 (0.7%%)
Failed COM3102 once, no further action:	1 (0.2%)
Overall pass rate as of 1 Sep 2007:	359 (87.6%)
Unresolved:	52 (12.7%)

These statistics are substantially identical to those of Cohort 200730.

We also looked at the overall pass rates of students who enrolled at LTU as first-year students (FTIACs) vs. those of transfer students (these data are as of 1 September 2008):

Cohort 200730	FTIACs	93.3%
	Transfers	86.6%
Cohort 200830	FTIACs	85.5%
	Transfers	84.9%

Note that the Cohort 200730 students have had longer to pass; these data include all who passed between 1 September 2007 and 1 September 2008. These data do not seem to support any substantial difference between FTIAC and transfer students.

In summary, based on Cohort 2007 and on Cohort 2008 as far as we have been able to follow it, the overall writing proficiency passing rate within a year or so of the first attempt is over 90%, with around 10% needing a second attempt or COM3102. A few percent remain enrolled but unresolved, and a few percent are no longer enrolled. Given that the intent of the WPE is to assess basic writing competency (as opposed to excellence), and that it was never intended to be a serious obstacle to the majority of students, these figures seem about right to us.

Faculty Perceptions and Practices

We have thought it desirable to obtain information on the faculty and "classroom" context in which the WPE has been operating – that is, information about how many writing assignments are being given, how they are being handled, and faculty views about the state of student writing at LTU. For this purpose, as short survey was given to the faculty at Assessment Day 2007 (September 21, 2007). We received 47 responses, representing approximately half the participating faculty. Unfortunately, these were not evenly distributed among the Departments; only five of the ten Departments at LTU submitted any responses (Natural Sciences, Humanities, Civil Engineering, Architecture, and Art and Design). This means that the College of Architecture and Design was somewhat over-represented in this sample, the College of Engineering somewhat under-represented, and the College of Management not represented at all. However, looking at the breakdown of responses by Department generally does not suggest large-scale differences among the Departments that did respond, so the results are probably generally valid. Some specific comments on this point will be made below.

The survey results, broken down by department, are as follows:

Results of Faculty Survey on Writing (September 2007)

1. In the last three to five years, the number of writing assignments I make in my courses has

	Increased	Stayed the same	Decreased
NS	5	6	0
HSSC	6	7	0
CE	2	4	0
COAD	9	9	2
Total	22	22	2

2. In the last three to five years, my standards for acceptable writing in my courses has

	Increased	Stayed the same	Decreased
NS	6	4	1
HSSC	5	8	0
CE	2	3	1
COAD	9	8	0
Total	22	23	2

3. Generally, in the past three to five years, the quality of student writing that I see has

	Improved	Stayed the same	Decreased
NS	4	7	0
HSSC	6	4	3
CE	0	6	0
COAD	5	3	9
Total	15	20	12

4. In my classes where writing is assigned, I distribute a writing assessment rubric

	Always	Sometimes	Never
NS	4	6	1
HSSC	11	1	1
CE	1	5	0
COAD	4	6	7
Total	20	18	9
w/o HSSC	9	17	8

5. When I encounter inferior writing in my classes, I

	Grade it myself the Writing Achievement Center	Ignore it	Hand it back and refer the student to Clinic or to the Academic
NS	11	0	0
HSSC	12	2	0
CE	4	0	2
COAD	13	1	2
Total	40	3	4

[NS = Natural Sciences; HSSC = Humanities, Social Sciences, and Communication; CE = Civil Engineering; COAD = College of Architecture and Design (Departments of Architecture and Art and Design, combined responses)]

These results support the following conclusions:

- Overall, about half the faculty report an increase in the number of writing assignments made in their classes, and almost none report a decrease.

- In about the same proportions, faculty report that their standards for written assignments have increased. Clearly, faculty members have not relaxed their standards for student writing.

- There seems to be at most weak support for the often-expressed view that the quality of student writing is decreasing. Although opinion is clearly divided, a small plurality of faculty see it as not having changed over the past three to five years; of the remainder, a slight preponderance see it as having improved. Interestingly, this is the one question that suggests a difference between the three Colleges represented: Arts and Sciences faculty seem to see quality as improving, Engineering faculty (to the extent they are represented by Civil Engineering) see it as stable, while Architecture and Design faculty see it as decreasing.

- Only a very small plurality of faculty always distribute a rubric with their writing assignments. About the same number do so sometimes, and about 20% never do. These results are even more striking if the HSSC faculty are eliminated from consideration: as might be expected, almost all of the HSSC faculty distribute a rubric consistently, and the proportion of other faculty who do so is correspondingly lower.

- Most striking of all, the great majority of faculty in all the Colleges are more likely to grade poor writing assignments themselves than to ignore them or to refer the student to the Writing Clinic. There is, of course, nothing wrong with their choosing to do so, but it is surprising that so many should choose to take on this task when a sanctioned and supported alternative is available.

The first three of these conclusions are interesting, but the last two are fundamentally connected with important concepts of the writing improvement program. The relatively low use of rubrics suggests the possibility that students may not always be getting the right message about the importance of good writing, or clear standards as to how to produce it, with predictable consequences for the quality of writing they produce. The underuse of the Writing Clinic creates needless work for the faculty, while foregoing the opportunity to direct the student to appropriate help.

Comments and Recommendations

Based on the above, the Writing Improvement Committee makes the following recommendations:

The program of actively reminding the faculty to distribute writing rubrics should be resumed. One of the things we have learned about all assessment programs is that such reminders are almost always necessary, and in any case merely posting the rubrics will probably not reach new faculty and adjunct faculty effectively. This should be done at the Department level, and made the responsibility of the departmental assessment officer, so that the appropriate local rubrics are distributed.

The Writing Clinic should be promoted aggressively, among both students and faculty. Faculty, in particular, need to be encouraged to use this resource in their own interest as a labor-saving device. At the same time, the quality of writing advice given by the Writing Clinic should be monitored.

The problem of having two rather different sets of standards for student writing – one represented by the rubrics used for course assignments and the other by the rubric used for assessing the WPE – needs to be resolved or at least reduced. It is probably not desirable to have a single rubric for both – the course rubrics need to be specific to the courses, while the WPE rubric is to be applied to one specific situation – but they should be more like one another than they now are. A better consensus needs to be reached about the relative importance of the presentation and development of ideas versus the correct handling of spelling and grammar. Also, the WPE rubric needs to be simplified and purged of ambiguous terminology.

A program of WPE grader training and grading normalization should be put in place, to make sure that the outcome for a given student depends as little as possible on which graders evaluate his/her writing sample. This program should be funded adequately.

At present, we do not have much information about when students take the WPE. The original intention was that they should take it as soon as possible after attaining Junior standing (i. e. at 60 semester hours), but this cannot be enforced through Banner since Banner cannot set flags based on credit hours. Accordingly, we recommend that Faculty in all Departments identify courses in their programs that have a significant writing component and would normally be taken by students at about this point, and make COM3000 a prerequisite for these courses. WPE checking should also be part of the advising process.

We do not see any need for action at this point that would directly affect the passing rate statistics. It was never the intention that the WPE would represent a significant roadblock for most students, and a first-try passing rate of around 80% and a second-try rate of another 10% appear to be about the right. However, we note that the recent large increase in the number of ESL students may presage trouble with the WPE in a few years, and we recommend that this situation be monitored closely.

We also recommend that specific plans be made for administering the WPE to LTU On-Line students.

Finally, we would like to make a few suggestions intended to improve congruence between faculty expectations of the Writing Improvement Program, and in particular the Writing Proficiency Exam, and the actual intentions of the Program. In particular, the purpose of the Writing Proficiency Exam is not to produce excellent writing; rather, it exists to enforce a requirement that LTU graduates be able to write with a minimum level of competence under a certain set of conditions. By itself, it will probably do little to improve writing in other courses, taken either before or after the WPE. There is abundant anecdotal evidence to suggest that many students, even those who can write well, will do so only when it is clearly required of them. We believe that the way to get better writing in courses is for faculty to set high standards, communicate them to their students in the form of a rubric, and return any writing not meeting those standards for revision.

Also, it should be remembered that good writers learn by imitation, and students should be called upon to read widely and be exposed to good models. Faculty should choose well-written texts and insist that students read them.

Respectfully submitted,

Walter Dean, Director of Assessment
Harold Hotelling, HSSC faculty
Mary Thomas, Director of Institutional Research and Academic Planning
September 2008

Assessment of Student Writing Samples

Direct assessment of student writing was achieved by a repetition of the 2003 writing sample survey, carried out by a task force comprising one faculty member from each college:

Benjamin Benson, College of Management
Barry Knister, College of Arts and Sciences
Gretchen Rudy, College of Architecture and Design
Chris Riedel, College of Engineering

This team assessed 56 randomly-selected individual writing assignments from larger collection of papers submitted from courses in the three colleges (Arts and Sciences, Architecture and Design, and Engineering) with undergraduate course. Their findings are reported on the following pages.

WRITING ASSESSMENT – CLOSING THE LOOP

REPORT

September 16, 2008

Writing Assessment Committee

Benjamin Benson
Barry Knister
Gretchen Rudy
Chris Riedel

Executive Summary

This report is a follow up to the 2003 Technical and Professional Writing Committee report which initiated the assessment of student writing at LTU. The task of the current writing committee was to close the loop on the initial 2003 writing assessment data by conducting a writing assessment task equivalent to that which was done in 2003 and compare the results.

The results indicate that while student writing did not deteriorate, their writing did not significantly improve. In fact, the data for both grade distribution and number of major and minor errors suggests that there was little or no improvement in quality of student writing. These results were observed across all colleges. When comparing FTIAC and transfer students, the data suggests that FTIACs may have done slightly better than transfer students; however, the difference between the two is not as significant as it was in 2003. Data is presented comparing the assessment results here to those of the writing proficiency exam (WPE). However, due to significant differences in their methodologies, a correlation between the two is not conducted. Recommendations to improve student writing include adopting Banned Error list in each college, establishing a writing coach/mentor in each college, and encouraging the use of Safe Assignment.

Methodology

The methodology was identical to that used in the 2003 initial writing assessment. While a detailed explanation of the exact process can be found in the 2003 report, only a brief overview is given here. Initially, writing samples were collected from various departments and colleges within the university. The papers were representative samples (done by individuals, not teams) from senior- and junior-level courses and were completely anonymous–the instructor's name, student's name, course names and numbers, and instructor's grade were not revealed to the committee members. While many of the writing samples collected were from the same courses as those in the 2003 assessment, some samples were new. A total of 56 papers were selected for assessment. The distribution of these papers is shown below.

College/Department	Number of Papers
Architecture & Design	8
Arts & Science	22
Business *	6
Engineering	20

* Part of the College of Arts and Science

The papers were graded according to the same set of evaluation criteria as was used in 2003 (see 2003 report for the list of evaluation criteria). For each criterion, a plus (+) indicated good or acceptable and a minus (-) indicated poor or unacceptable: Grammatical errors and errors in mechanics (spelling, punctuation, capitalization, etc.) were also evaluated. These errors were grouped into two categories:

- Major errors

Those supplied by the Humanities Banned Error List, which includes fragments, comma splices, subject-verb agreement problems, run-on sentence errors and pronoun reference problems.

- Minor errors

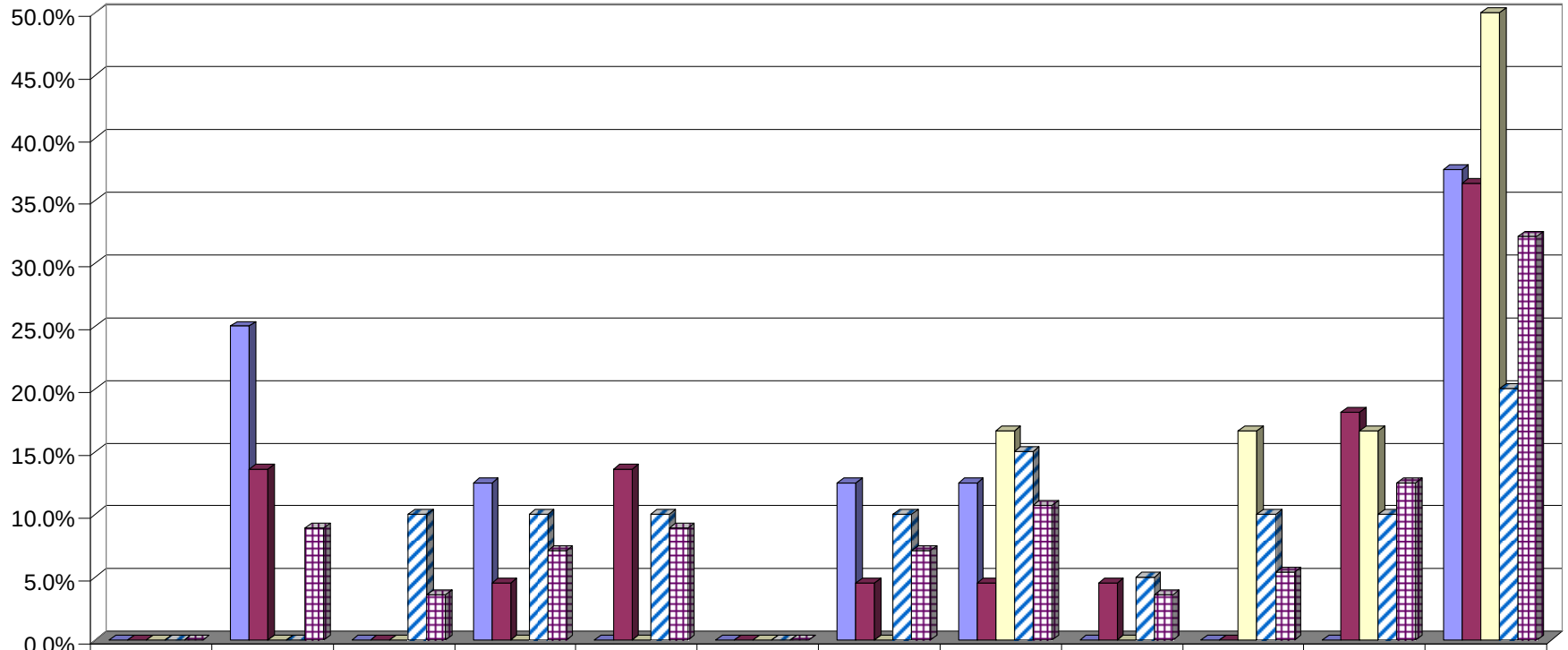
These include all other errors such as those related to general punctuation, formatting, spelling, and capitalization.

Each paper was given a letter grade based on the plus or minus it received from the evaluation criteria. That grade, however, was adjusted according to the number of major and minor errors the paper contained. For every three major errors, the grade was lowered by one-half of a letter grade. For every five minor errors, the grade was lowered by one-half of a letter grade. Thus, the final grade reflected not only the quality of a paper's content but also its grammatical and structural integrity.

The grading was accomplished by splitting the committee into two teams of two persons. The 56 papers were divided equally between the two teams, with each person reading all 28 papers to his/her team. Both members of each team read and graded the same papers, identifying all errors and tabulating the total number of major and minor errors for each paper. After completing their own individual grading, the two team members compared and discussed their findings. The final grade and total number of major and minor errors for each paper represents an average of the individual results.

The following charts and graphs provide a quantitative presentation/characterization of the errors in the papers, the paper grades by college/department, and paper grades versus entry status.

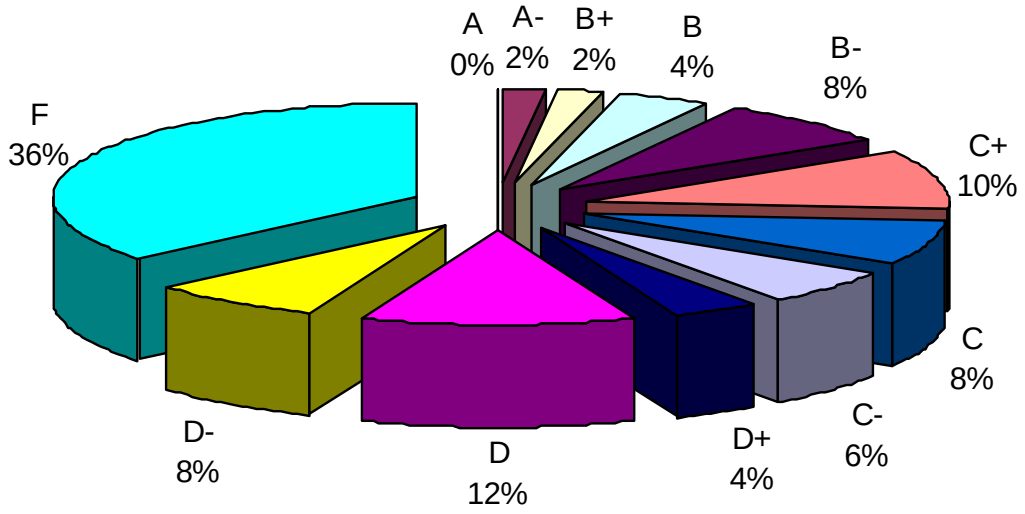
Figure 1: Grades as a Percentage of Total Papers Read



	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Architecture	0.0%	25.0%	0.0%	12.5%	0.0%	0.0%	12.5%	12.5%	0.0%	0.0%	0.0%	37.5%
Arts & Science	0.0%	13.6%	0.0%	4.5%	13.6%	0.0%	4.5%	4.5%	4.5%	0.0%	18.2%	36.4%
Business	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	0.0%	16.7%	16.7%	50.0%
Engineering	0.0%	0.0%	10.0%	10.0%	10.0%	0.0%	10.0%	15.0%	5.0%	10.0%	10.0%	20.0%
Total	0.0%	8.9%	3.6%	7.1%	8.9%	0.0%	7.1%	10.7%	3.6%	5.4%	12.5%	32.1%

Figure 2: Grade Distribution Comparison – All Papers

2003



2008

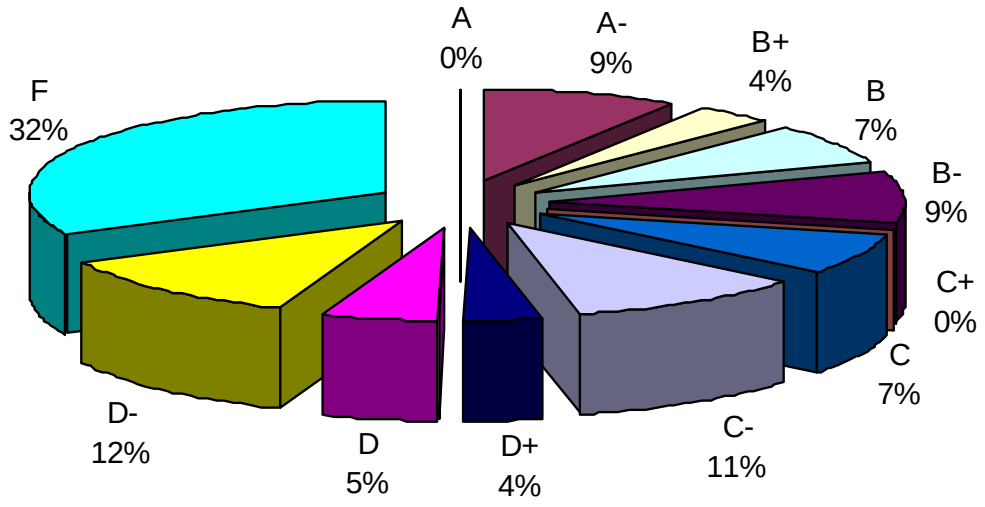


Table 1: Average Errors per Paper Read

	Average Number of Errors		Percentage	
	Major	Minor	Major	Minor
Architecture	6	12	33%	67%
Arts & Science	4	16	20%	80%
Business	8	9	47%	53%
Engineering	3	13	19%	81%

Table 2: Comparison of Errors per Paper Read

	2003		2008	
	Major	Minor	Major	Minor
Architecture	8%	92%	33%	67%
Arts & Science	20%	80%	20%	80%
Business	25%	75%	47%	53%
Engineering	13%	87%	19%	81%

Figure 3: Grade Distribution by Entry Status

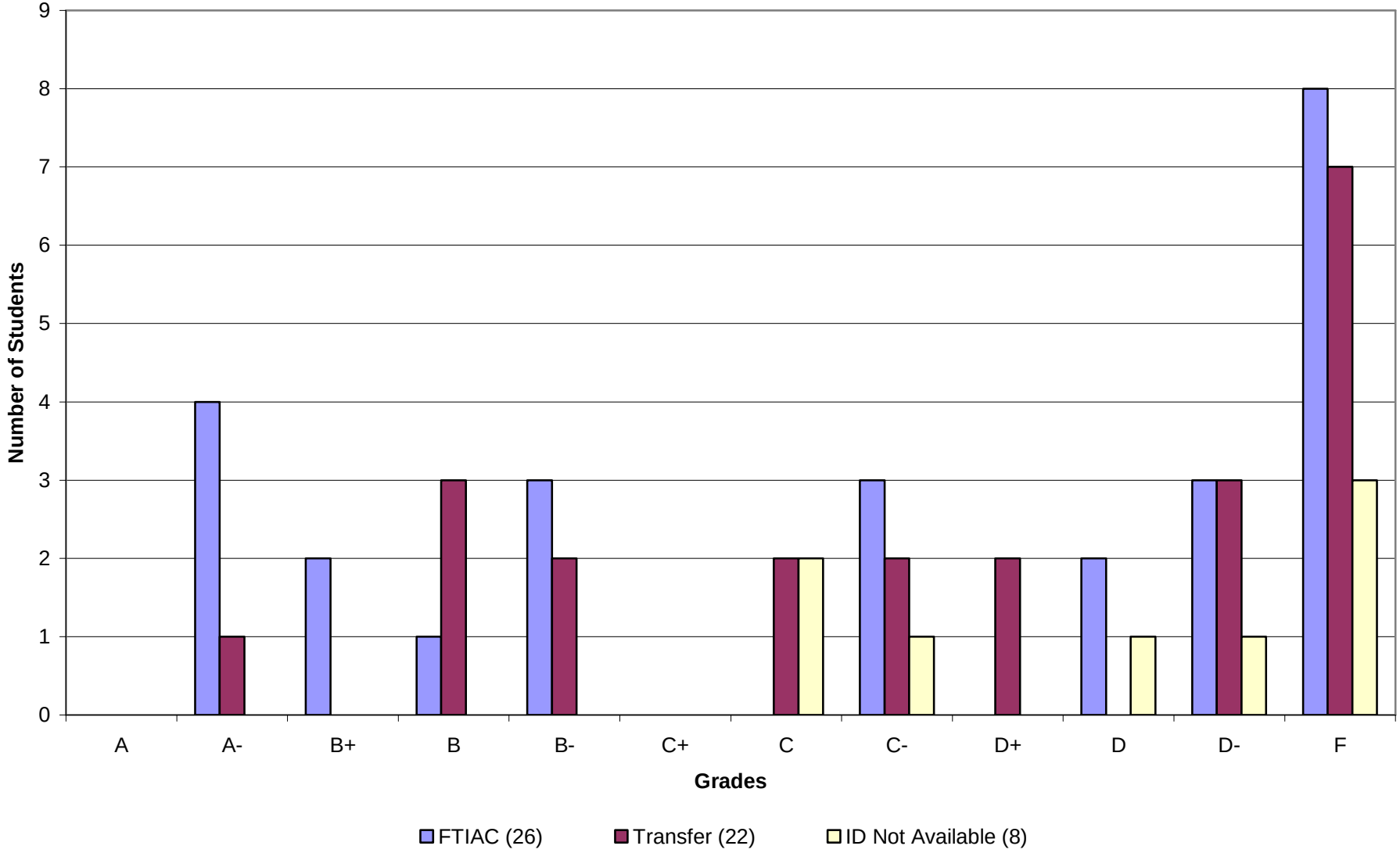
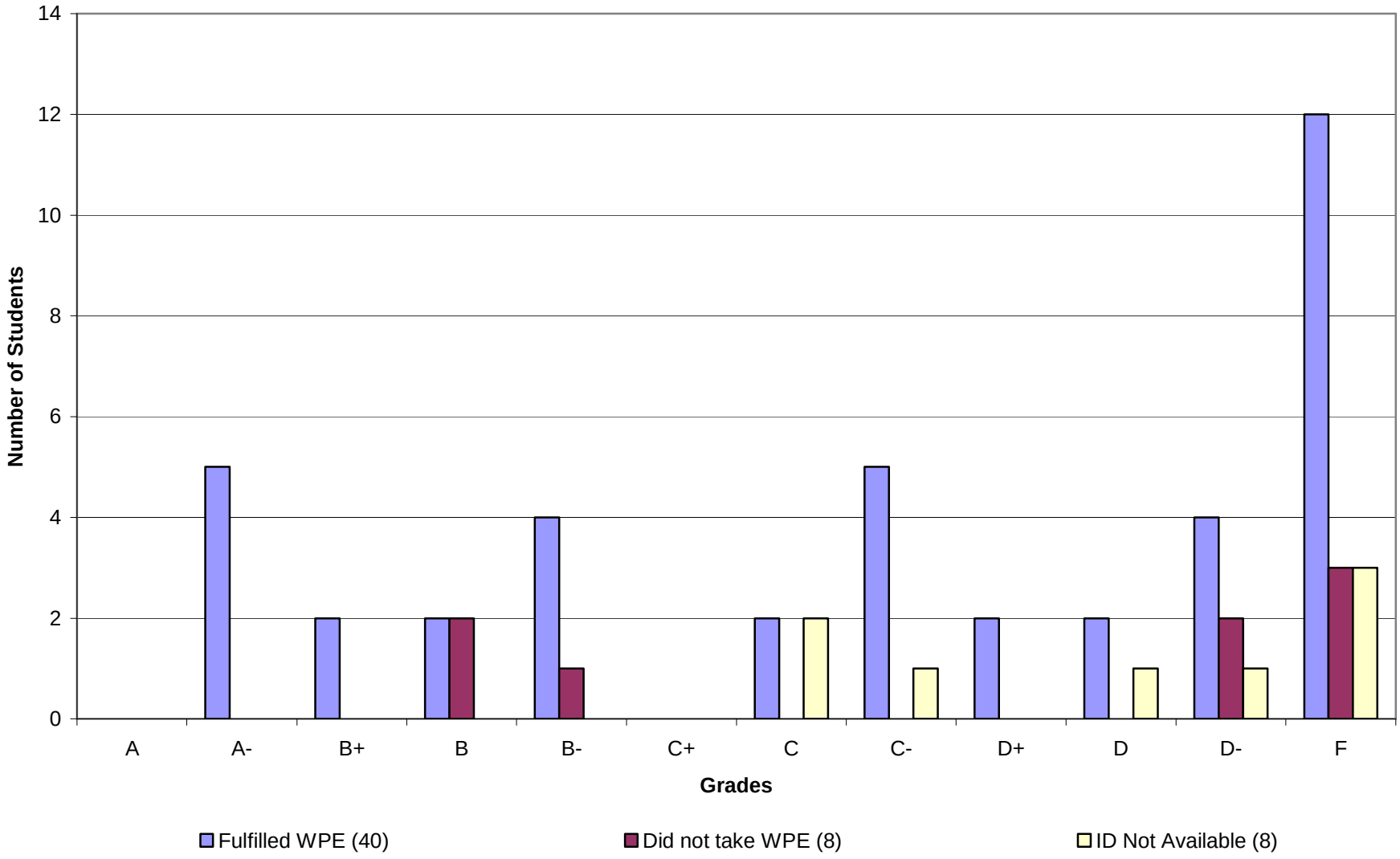


Figure 4: Grade Distribution by WPE Fulfillment



Observations

Figure 1 shows the distribution of grades for each college. While the distribution varies across colleges, a disproportionate percentage of the writing samples from all colleges received a grade of F. This was also observed in 2003 (see Figure 2). Comparing Figures 1 and 2 suggests that there has been little or no improvement in student writing since 2003.

Tables 1 and 2 give the average number of major and minor errors per paper. The data clearly shows that most of the samples had a significant number of minor errors. This was true of all colleges and was the same in 2003, as seen in Figure 2. Just as in 2003, there were a number of papers in which major and minor errors were so significant that they caused otherwise well structured papers to receive unsatisfactory grades (grade D or F). For example, one a paper was initially assigned a B- grade, and ultimately received an F because it had 24 minor errors and 10 major errors. Similar to 2003, part of the explanation for why 32 percent of the papers received an F grade may be related to the large number of errors encountered in papers across the colleges.

The most common major errors (grammar and mechanical issues) were fragments, run-on sentences, and comma splices. In terms of minor errors, there were unclearly articulated statements of purpose or an absence of a statement of purpose, lack of development in the treatment of the topic or problem, incomplete or nonexistent lists of references/sources, and spelling mistakes.

Figure 3 shows the break-down of grades based upon entry status (first time in any college -- FTIAC --or transfer student). There were 26 FTIACs and 22 transfer students. It should be noted that eight papers had no identification and their status could not be determined. While FTIACs had more A and B grades than transfer students, the distribution of C, D and F grades was about the same. Thus, the overall trend of the data seems to suggest that FTIACs may have done slightly better than did transfer students. In 2003 the data clearly showed that FTIAC students did better. A comparison between them and transfer students here does not show such a significant difference.

Figure 4 shows the grade distribution based on the fulfillment of the writing proficiency exam (WPE). There were 40 samples from students who fulfilled the WPE (either by exemption or by passing the WPE) and eight samples from students who did not take the WPE. Again, there were eight papers that had no identification and whose status with regard to the WPE could not be established. The one striking feature of the data is that there were quite a few students (12) who passed the WPE but received a grade of F on their assessed paper. In explaining this, the committee wished to point out the writing assessment process and the WPE are vastly different in their criteria and methodology. The writing samples used for assessment were written as part of a course, with each paper being done outside the classroom over a period of days or even weeks. The WPE, on the other hand, is administered as a test (in a classroom) with each student having 2.5 hours to complete the paper. In addition, grading of the work for the WPE is based on pass-fail, not on letter grades or on the number of major errors from the LTU Banned Error list.

Recommendations

In formulating recommendations, the committee is mindful that a core mission of the university is to promote leadership, and that a key component of leadership is skill in communication, in both written and oral forms. Since the issue of writing impacts the mission of the university, the committee took the crafting its recommendations very seriously. It believes that the implementation of these recommendations will support LTU's goal of improving communication skills, to the end of contributing to LTU's objective of making the leadership program at LTU a success.

Recommendation 1: Institute a Banned Error List in Each College

The committee is recommending that a Banned Error List, similar to the one currently used by Arts and Sciences, be developed and implemented in each college. In addition, each college will develop its own grading criteria for writing based upon their Banned Error List, and then use these criteria in grading student written work. Thus, all writing in the colleges will be evaluated in relation to their college Banned Error List. This will result in each college having one standard on which to base the evaluation of student writing. The list, along with the specific grading scheme of each college, will then be placed on individual department and/or college websites for the use of faculty members and administrators.

The rationale for this recommendation is two-fold. First, based on the samples the committee evaluated, it is clear that writing (in terms of style and content) varies greatly across colleges and even departments. This leads the committee to conclude that the

grading of writing also varies greatly across departments and colleges. In order to fairly and accurately assess writing in all the LTU programs, a flexible but universal standard (or metric) is needed. The current Arts and Science Banned Error list is ineffective due to the perception that it is owned by and therefore applicable to only the College of Arts and Sciences. To be effective, the Banner Error list needs to be modified where necessary, and implemented in each college. Doing so will speak to the issues of applicability and ownership. Second, since the ultimate goal of assessment is to improve student writing, any action taken to achieve this goal must be directed by departments and colleges, in order to gain the support of faculty, chairs and deans. If this sense of "local ownership" is missing, the committee believes the program has little chance of success.

Recommendation 2: Creation of a Writing Coach in each College

Many faculty are reluctant to grade and evaluate student writing. This is understandable inasmuch as their principle areas of expertise often do not focus on writing. To aid them, the committee recommends that the university call on each college to choose from its ranks a well-qualified writing coach. This person will be granted release time to coach/mentor faculty within the college. One of the primary duties of the Writing Coach will be to implement recommendation 1 in his/her college. In addition, he/she will work with faculty to assist them with their writing assignments. This can include classroom visits to explain writing criteria as it pertains to the individual college. The Coach can meet with instructors to regularly review the instructor's expectations for a project or course paper and to discuss any challenges the students are facing.

Note: It should be emphasized that the function of the Coach is *not* meant to infringe upon or duplicate the role of the Academic Achievement Center (AAC). To the contrary, the Coach's work will serve to augment the effectiveness of the AAC. The Coach will work with faculty, students and AAC, effectively acting as an intermediary for these constituencies. In fact, it is reasonable to assume that the AAC will be better utilized with a liaison Coach in each college.

Recommendation 3: Safe Assignment

The committee also recommends that the faculty be strongly encouraged to make use of Safe Assignment in the evaluation of their students' writing. The usage of Safe Assignment by faculty should help address the issue of plagiarism. While the software is currently being used by some, as more utilize the software, the committee believes Safe Assignment may have a positive impact on promoting the importance of writing to our students. If this is accomplished, a heightened awareness of the importance of writing among both students and faculty is certain to contribute meaningfully to LTU's leadership initiative.

3. Assessment of Character Education Goals

Assessment of Character Education proceeded along two pathways this year. One effort was aimed at better defining faculty expectations with regard to these goals, beginning with the departmental discussions on Assessment Day. This was followed up by a brown-bag lunch held in November that included a presentation on academic ethics and subsequent faculty discussion. Following this, the Committee decided that a full-scale survey of the faculty would be useful. Several instruments were considered for this, including the Defining Issues Test, the Schwartz Values Survey, and the Portrait Values Questionnaire; eventually, the Character Education Quality Standards survey was found to be the most appropriate. After clarifying some copyright issues, the survey was modified in such a way that the questions were more pertinent to University faculty (the original survey was written for K-12 students) and to provide for two responses to each question: one indicating the present status of the issue addressed by the question in the LTU curriculum, and the other indicating how important that issue was considered to be. This survey was administered by asking each member of the Assessment Committee fill it out and then present it to their faculty for consensus. The survey was done very late in the Spring, so the results will be discussed in a future report.

Meanwhile, plans were also made to assess students by administering a survey in the Spring (to seniors) and Fall (to first-year students). The Portrait Values Questionnaire seemed the most appropriate for the purpose, but after some discussion with the administrators of the Discovery Days program (for first-year students) it was decided that our students were in danger of being "over-surveyed" and that adding one more survey to their program, or to the University Seminar curriculum, would not be well received. However, the data we are seeking can probably be extracted from the Cooperative Institutional Research Program (CIRP) survey (from UCLA), which is already scheduled to be administered. The CIRP survey includes questions on values, attitudes, beliefs, and self-concept. Accordingly, the plans to survey seniors in the spring were put on hold, and we will look at the CIRP results next year.

4. Assessment of Mathematics and Science Goals

Competence in mathematics and science is included among the goals under "Fundamental Cognitive Skills and Abilities":

II. 4. Graduates will demonstrate competence in mathematics and in the use of the scientific method and laboratory technique.

Some progress was made toward developing assessments of these goals. The Assessment Committee conducted a comprehensive survey in which all Departments were asked to define "competence in mathematics" in terms of their programs and to specify what concepts should be particularly addressed. With this information, a program of common questions on final exams will be developed and used to provide direct assessment of mathematical competence.

For assessing competence in science, the Committee felt that the best approach would be similar to the assessment of critical thinking, by means of a "pre-post" survey. One candidate, the CAAP "Scientific Reasoning" test, was reviewed, but it was found to focus primarily on science content, making it unsuitable in view of the side variety of science courses taken by LTU students.

5. Assessment Plans for Graduate Programs

A major initiative this year was to make progress on the development of assessment plans for LTU graduate programs. Since its inception, the Assessment Committee has concentrated primarily on assessment at the undergraduate level, with graduate program assessment – which is not tied to the undergraduate Student Learning Goals – left to develop on their own. By the beginning of this year it had become apparent that this was not going to happen in the near future unless stimulated. According, the Director of Assessment (Dean) and Associate Provost Howell undertook the following initiatives:

- The goal of having an assessment plan developed for each graduate program by the end of the year was adopted.

- In the annual face-to-face Departmental assessment reviews, held in the fall, the need for development of assessment plans for all graduate programs was stressed.

- A workshop was held for all graduate Program Directors in January, in which the need for assessment plans was again stressed. The main points developed were that graduate programs have their own goals, which have no necessary relation to the undergraduate learning objectives, and that ordinarily these would be much smaller in number, typically two or three. The Program Directors developed three learning outcomes relevant to their programs and were asked to expand these into an assessment plan by developing direct and indirect assessment methods for each outcome.

- A follow-up meeting was held in February.

Success with this initiative was rather limited. By the end of the academic year, complete or essentially complete assessment plans had been submitted only by the Master of Civil Engineering and Master of Science Education programs. Some other programs had achieved substantial progress, and this effort will be continued into 2008-09.

6. Sources of Funding for Assessment Initiatives

A task force of Assessment Committee members (Faoro, Carpenter, White) undertook a survey of potential sources of funding for assessment initiatives. They were able to identify 20-30 sources, including the Teagle Foundation of Ohio which funds projects in character education, and also sources funding leadership assessment. However, after reviewing the criteria for representative programs the task force considered that we are still a year or two from being able to successfully pursue such funding.

The task force's report is presented on the following pages.

To: Assessment Committee **Date: 4/19/2008**
From: Dan Faoro; Sub committee chair, Bill White, Don Carpenter

University Assessment Sub-Committee / Funding Sources:

Purpose: The sub committee's focus is to identify and document potential funding sources for university wide assessment initiatives.

Tasks: Based on a keyword search of the following topics, the office staff assistant from COAD compiled a spreadsheet of the University Assesment Funding Sources below. They were ranked based on topic, availability 1 highest, 2, mid level, 3- lowest. The keyword search topics identified were Assessment University Assessment, Higher education , education assessment.

Overview: Most grants for university Assessment are made by private foundations. There are a number of universities/colleges that fund internally small, seed grants, for dept. or course level assessment plans , typical awards are $1,000- 2,000.

Timetable: By January 20th 2007 - April 30th 2008 with help from Deans office Student Assistant Elizabeth Bullard (COAD) the following list is to be outlined as follows.

Spreadsheet EXAMPLE:

Funder Name	Www. Link For grants	Typical Grant deadline	Typical Award Amount. ($)	Ranking 1(high) -4 (low)	Topics Funded.
Acme Foundation	Acme.org	Dec 2nd,/June 1st.	20,000	2	Higher ed. Civic educ.

INITIAL LIST OF GRANT SOURCES BASED ON KEYWORD SEARCH.

http://www.standardnewswire.com/news/46369813.html

1. Teagle Foundation Announces $1.5 Million in New Grants

Collaborative Projects Aim to Meet Broad Goals of Liberal Education, Also to Continue Assessment of Best Practices for Improved Student Learning

Contact: Donna Heiland, Teagle Foundation Vice President, 212-373-1970

http://www.alma.edu/news/releases/archives/2005/07/08/Teagle

Alma College Shares Teagle Foundation Grant for Assessment

A consortium of Midwest highly selective liberal arts colleges that includes Alma College has been awarded a $300,000 grant from the Teagle Foundation of New York City designed to measure civic engagement and enhance their students'' educational experience.
The grants are part of Teagle's Outcomes and Assessment Initiative, which promotes institutional and faculty collaboration in order to strengthen teaching and learning. The grant was awarded to the consortium of Alma College (MI), Augustana College (IL), Gustavus Adolphus College (MN), Illinois Wesleyan University (IL), Luther College (IA), and Wittenberg University (OH) for their project ""Measuring Intellectual Development and Civic Engagement through Value Added Assessment."" Augustana will administer the consortium''s grant distributed over three years.

The research project attempts to assess the consortium colleges'' common claim that a liberal arts curriculum combined with extra- and co-curricular activities transforms students intellectually and prepares them for lifelong engagement in their communities. Members will explore the skills central to the liberal arts: writing, critical thinking/analytical reasoning, and civic engagement.
With curricula varying significantly among the consortium, the research can measure which approaches to teaching core values have the greatest student gains. The assessment project will use national surveys and institutional resources and bring consortium faculty together annually to evaluate student learning and growth. Volunteer activities will be tracked and awareness of ethical and social issues will be gauged to explain the relationship between intellectual gains and civic engagement and which institutional approaches to service learning work best.
The Teagle Foundation awarded $2 million to more than 50 colleges throughout the United States divided into six consortia as part of their assessment initiative.
The Teagle Foundation was established in 1944 by Walter C Teagle, longtime president and later chairman of the board of the Standard Oil Company, now Exxon Mobil Corporation. The foundation is committed to providing intellectual and financial leadership for the promotion and strengthening of liberal education

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2. Annenberg Foundation : Grants for Education/Civic Education.
http://www.annenbergfoundation.org/grants/grants_show.htm?doc_id=210575

http://www.annenbergfoundation.org/news/news_show.htm?doc_id=516620

Grantee News
javaScript:print_popup('http://www.annenbergfoundation.org/cnlib/custom_tags/content/print_email_doc.htm?action=print&custom_banjavaScript:print_popup('http://www.annenbergfoundation.org/cnlib/custom_tags/content/print_email_doc.htm?action=print&custom_banjavaScript:print_popup('http://www.annenbergfoundation.org/cnlib/custom_tags/content/print_email_doc.htm?action=email&custom_banjavaScript:print_popup('http://www.annenbergfoundation.org/cnlib/custom_tags/content/print_email_doc.htm?action=email&custom_ban Campaign for the Civic Mission of Schools launches expanded database of civic learning practices The Campaign for the Civic Mission of Schools, an Annenberg Foundation grantee, has re-launched its website for educators and advocates of civic education.

The website www.civicmissionofschools.org offers a database of

civic learning lessons and practices

professional development and related resources

whole school or district models

the latest research on how to invigorate youth civic engagement

Advocates for the renewal of civic education in the schools can download an Advocacy Toolkit consisting of

strategic advice and practical information on how to be most effective with legislators, policy makers, educators and the public

key messages and communication tools that make a strong case for high quality civic learning

Click here to read the latest issue of Educating for Democracy, a quarterly newsletter which provides updates from the Campaign and the field to policymakers, educators, civic learning advocates and practitioners, and concerned citizens interested in policy issues supporting the civic mission of schools.

3. University Internal funding grants for Assessment. Univ. of California San Bernandino.
http://gradstudies.csusb.edu/outcome/links.html
http://gradstudies.csusb.edu/outcome/funding.html

4. North Carolina State Web Page liks on University Assessment:
http://www2.acs.ncsu.edu/UPA/assmt/resource.htm

Assessment Grants

1. Grant Opportunities: Blue Ridge Community College's annotated list of *private foundations* that support higher-education projects.

1. **Grant opportunities for Assessment**.

The BRCC Office of Institutional Research and Effectiveness (OIRE) is available to assist faculty and staff with finding and applying for grants. Information regarding those foundations or agencies that do not have an active link below may be obtained through the OIRE. This list is by no means a complete list and those interested in seeking grant funding should investigate additional sources.

Foundations:

This is a list of private, independent foundations that support grant programs in higher education.

Many of these foundations make their areas of focus and guidelines available on the Internet. A brief description of each is provided; however, to fully investigate whether your project matches the interest of a given foundation, you will need to follow the appropriate link below.

2. Annenberg Foundation : Grants for Education/Civic Education.
http://www.annenbergfoundation.org/grants/grants_show.htm?doc_id=210575
http://www.annenbergfoundation.org/news/news_show.htm?doc_id=516620

Arnold and Mabel Beckman Foundation : The Arnold and Mabel Beckman Foundation makes grants to non-profit research institutions to promote research in chemistry and the life sciences, broadly interpreted, and particularly to foster the invention of methods, instruments, and materials that will open up new avenues of research in science.

BellSouth Foundation: Special Initiatives provide an opportunity for the Foundation to work directly on an education issue as a partner with grantees and other educators. For each initiative, the Foundation convenes the partners regularly, secures technical assistance as needed, provides an online electronic forum for sharing and discussion, and disseminates the initiative results to bring greater attention to the issue.

Burroughs-Wellcome Fund: BWF's emphasis is on the career development of biomedical scientists and on advancing areas in the basic medical sciences that are under funded or that have a shortage of qualified researchers.

Carnegie Corporation of New York: In the coming year, the Corporation's concern for the liberal arts will be explored through the development of a comprehensive strategy. The foundation's goals include strengthening the central purposes of the liberal arts and their delivery for an emerging world of mass higher education where highly mobile students transfer from institution to institution, where credits and credentials are portable and there is an increasing demand for utility and convenience. Particular attention will be given to projects that strengthen core liberal arts requirements in community colleges; that promote coherent articulation of the liberal arts between two-year and four-year institutions; that commit four-year B.A. or B.S. degree-granting institutions to assume greater authority over their liberal arts requirements; that facilitate international engagement within liberal arts requirements; that promote the teaching of science and technology as general and liberal education; that explore the teaching of liberal arts via

distance learning technologies; and that elevate the teaching of liberal education, general education and the liberal arts within four-year B.A. or B.S. degree curricula.

Christian A. Johnson Foundation: This Foundation has funded projects related to liberal-arts and interdisciplinary studies. (1060 Park Avenue, New York, New York, 10128-1033. phone - 212.534.6620)

Ford Foundation: In education reform we seek to enhance the capacity of schools and higher education institutions to broaden access while pursuing higher levels of student achievement, especially for historically underserved groups. In this way, we help reduce poverty and inequality by promoting better educational practices for all students.

In higher education and scholarship our goal is to expand knowledge and deepen scholarship, curriculum and public understanding of pluralism and identity. We support social science training as a means of educating a new generation of leaders and scholars who can be more effective in their civic roles, helping to chart the future of their societies.

Freeman Foundation: Asian studies (60 Wall Street, 36th Floor, New York, New York 10260-0060, phone - 212.648.9673)

Bill and Melinda Gates Foundation: Most of their recent support for postsecondary education has been in the area of K-12 leadership development.

J. Paul Getty Trust: The Getty provides grants to institutions and inividuals throughout the world for projects that promote the understanding of art and its history and the conservation of cultural heritage. We seek projects that set high standards and provide opportunities for collaboration.

William and Flora Hewlett Foundation: The Foundation gives priority to inquiries that address the following issues. Apart from exceptional circumstances the Foundation does not provide grants for endowment, scholarships, or fellowships.

Liberal Arts and Diversity. Over the past few years the Foundation has solicited letters of intent and proposals for three programs in higher education, Liberal Arts, Pluralism and Unity, and General Education. The Foundation is assessing its experience in these program areas as part of its planning effort and will not solicit letters or proposals until planning is completed.

Using Technology Effectively. The Foundation supports innovative, technology-based projects that explore ways of substantially increasing the effectiveness and quality of content and instruction, both on campus and via distance learning.

California Community Colleges. Over the next few years, California is expected to experience a dramatic expansion of community college enrollment. The Foundation is interested in funding creative responses to this expansion that maximize opportunities for California''s diverse population.

Historically Black Private Colleges and Universities. In partnership with the Bush Foundation, the Foundation supports an ongoing program of grants for capital needs and faculty and administrator development at private black colleges and universities. The Bush Foundation administers this program.

Robert Wood Johnson: About three-quarters of our grants are awarded under the Foundation's various national programs. In these programs, multiple organizations around the country receive grants to implement proven strategies or develop new approaches to defined health problems. A small staff of experts oversees these grantees' efforts, usually from a National Program Office.

We also make grants to organizations that send us proposals from the field, whether unsolicited or at the Foundation's initiation.

Ewing Marion Kauffman Foundation: Ewing Kauffman advised his associates to invest in people and be willing to take risks as we look for opportunities to promote positive youth development and accelerate entrepreneurship in America. We consider our grants to be investments, and we look for a return on the grant investments we make. Ultimately, the return we seek will come when the following five outcomes are achieved:

- Children enter school prepared to succeed.
- Children and youth make a successful transition through childhood and adolescence to responsible adulthood.
- Youth and adults have the knowledge, skills and values to make entrepreneurship a choice for the future.
- Entrepreneurs have the knowledge, skills and values to accelerate job and wealth creation in America.
- Nonprofit leaders have entrepreneurial knowledge, skills and values to advance their organizations' social missions.

These five outcomes provide a strategic filter through which we evaluate all grant proposals and potential investments. These outcomes consistently guide our grant decisions, our day-to-day priorities and the allocation of human and technical resources throughout the Foundation.

W.K. Kellogg Foundation: The focal initiative for strategy 2 is called New Options for Youth Through Engaged Institutions. This initiative will support partnerships between communities and post-secondary education institutions to create innovative learning alternatives for vulnerable adolescents, ages 14-20, who do not succeed in traditional environments. The initiative is designed to find bold, new ways to help young people achieve higher levels of learning and prepare for meaningful work or post-secondary education.

Lilly Endowment

The Henry Luce Foundation: Support for higher education permeates much of the Luce Foundation''s work, and occasionally it makes grants for special projects that fall outside the boundaries of its other programs. These grants may address issues of shared concern for American higher education or may be compelling for intellectual or institutional reasons.

Some Higher Education grants reflect the foundation''s interest in interdisciplinary studies. For example, Duke University is pursuing a project on the interactions between economics, art, and art history and Pennsylvania State University is examining shared interests among the fields of anthropology, biology, and economics.

Lumina Foundation For Education: To ensure that Lumina Foundation serves its mission, we will initiate grant programs and solicit proposals for them. We encourage prospective grantees to reflect on the dimensions of the Foundation''s three main themes: financial access to postsecondary education, student retention and goal attainment, and nontraditional learners and learning. Proposals should address areas of common interest between the grant seeker and the Foundation.

John and Catherine MacArthur: The objectives of the Research and Writing Grants competition are to support projects that explore the development of improved understandings of key topics in global security and sustainability, and to broaden and strengthen the community of writers and scholars engaged in work on these issues.

The Andrew W. Mellon Foundation: The Foundation''s program in Teaching and Technology supports promising research on university level online learning and distance education. The program focuses on evaluative research on the uses of instructional technology, with limited support for development of such technologies (as accompanied by well-designed assessments).

Gordon and Betty Moore Foundation: The Foundation's Education Program is focusing on funding projects at the university and graduate level. The program is emphasizing science and technology to help develop the very best minds, and to provide individuals with the skills to apply their knowledge to society's problems. We are especially interested in programs that will expand and increase the participation of women and minorities in the sciences.

The Foundation's Environment Program is developing its strategy based on the Moores' dedication to biodiversity conservation. We are currently investigating the potential for preserving large wilderness areas, the role of stewardship, the status of the world's wild salmon populations and marine ecosystems, climate change and energy challenges, and collaborative efforts within these subject matters.

Charles Stewart Mott Foundation: This site provides detailed information about the C.S. Mott Foundation's programs - Civil Society, Environment, Flint Area and Pathways Out of Poverty. In addition to our four programs, we also fund Exploratory and Special Projects that may lead to a program area over time, or unexpected opportunities that address significant international and/or national problems.

John M. Olin Foundation Inc.:

Public Policy Research The Foundation supports research on the formulation, implementation and evaluation of public policy in the social and economic fields. Grants are made to study such areas as: regulation, taxation, fiscal and monetary policy, education and welfare.

American Institutions The Foundation seeks to promote understanding of the moral, cultural and institutional foundations of free government. Under this program, the Foundation supports studies of the American Constitution, the operation of American political institutions, and the moral and cultural principles underlying these institutions.

Law and the Legal System In this area, the Foundation seeks to deepen understanding of the American judicial system and to preserve the rule of law as the bedrock of American constitutional government. The Foundation supports public interest law and studies related to the judicial system, jurisprudence, and the relationship between law and economics.

Strategic and International Studies The Foundation makes limited grants in this field supporting projects that address the relationship between American institutions and the international context in which they operate. Such projects include studies of national security affairs, strategic issues, American foreign policy and the international economy.

In each of these four areas, the Foundation attempts to advance its objectives through support of the following kinds of activities: Research; institutional support; fellowships; professorships; lectures and lectures series; books; scholarly journals; journals of opinion; conferences and seminars; and, on occasion, television and radio programs.

David and Lucile Packard Foundation: The Foundation provides grants to nonprofit organizations in the following program areas: Conservation; Population; Science; Children, Families, and Communities; Arts; and Organizational Effectiveness and Philanthropy. The Foundation provides national and international grants, and also has a special focus on the Northern California Counties of San Mateo, Santa Clara, Santa Cruz, and Monterey. We do not accept proposals to benefit specific individuals or that serve religious purposes.

The Pew Charitable Trusts: Education and training beyond high school used to be one of many roads Americans could take to social and economic improvement--but it is becoming the only road. Yet at a time when the importance of attaining a college degree has never been higher, questions related to how well higher education is performing are being raised. Despite the rhetoric that defines the American dream, why is opportunity for higher education not evenly distributed across the 50 states? Why do fewer than half the students who begin college in this country graduate five years later with a bachelor''s degree? When students do graduate, troubling questions are being asked about how much students have learned. Employers report that a surprising number of new graduates do not have the skills needed to compete in today''s competitive market. Policy makers have been slow to address this issue because the public embraces higher education and views the system as highly successful. Systematic change is likely to remain elusive until higher education is motivated to make the changes

Alfred P. Sloan Foundation: The Foundation's programs and interests fall into the following areas:

- Science and Technology
  - Fellowships
  - Direct Support of Research
  - History of Science and Technology
- Standard of Living and Economic Performance
  - Industry Centers
    - Fellowships
  - Human Resources/Jobs/Income
  - Globalization
  - Business Organizations
  - Higher Education as an Industry
  - Performance Assessment of Municipal Governments
  - Dual-Career Middle-Class Working Families
- Education and Careers in Science and Technology
  - Learning Outside the Classroom The Sloan program in asynchronous learning, Anytime, Anyplace, Online
  - Education for Scientific and Technical Careers
  - Increasing Ph.D.s For Underrepresented Minorities
  - Pre-tenure Leave Fellowship Program
  - Other Programs for Women and Minorities
  - Retention of Students in Higher Education
  - Public Understanding of Science and Technology
- Selected National Issues and Civic Program

Surdna Foundation: Our goals are to prevent irreversible damage to the environment and to promote more efficient, economically sound, environmentally beneficial and equitable use of land and natural resources.

TEAGLE, Foundation Inc.: Has funded projects related to retention, institutional-research, and alumni networking. (10 Rockefeller Plaza, Room 920, New York, New York, 10020, phone - 212.373.1970)

Wallace - Readers Digest Funds: Most of their recent support for postsecondary education has been in the area of K-12 leadership development.

Whitacker Foundation: Biomedical Other Resources for Funding Opportunities:

US Department of EducationThe Chronicle for Higher Education

- Examples of *campus-based* programs to support faculty and departmental assessment projects. *Some of these grant programs are currently active, some are not.* (Thanks to Kurt Gunnell at Kansas State

University for posting the responses from the November 2000 ASSESS-list discussion on this topic. Some of these links are from Kurt's list.)

- Arkansas Tech University (*Word* document)
- Appalachian State University
- California State University, Northridge
- California State University, San Bernardino
- California State University, San Marcos (*Word* document)
- California State University, Stanislaus (*pdf* file)
- Central Michigan University (*pdf* file)
- Cleveland State University (*pdf* file)
- Concordia College
- Duquesne University: Guidelines & recipients.
- Indiana University-Purdue University Fort Wayne (*pdf* file)
- Indiana University-Purdue University Indianapolis
- Mesa Community College
- Miami University
- Mount Royal College
- Northern Virginia Community College
- Oakland University
- Oklahoma State University grants for assessment budgets and special projects
- Shepherd University
- Spokane Community College
- Southern Illinois University Edwardsville
- Truman State University
- University of Colorado at Colorado Springs
- University of Baltimore
- University of Illinois at Urbana-Champaign
- University of New Hampshire
- University of Wisconsin-Madison
- University of Wyoming
- Weber State University

4. Educational Resources Information Center (ERIC) Search database on University Assessment: http://www.eric.ed.gov/ERICWebPortal/Home.portal?_nfpb=true&ERICExtSearch_Descriptor=%22College+Outcomes+Assessment%22&_pageLabel=ERICSearchResult

7. Attendance at Conferences

Two members of the Assessment Committee (Howell, Brewster) attended the 2007 Assessment Institute at Indiana University – Purdue University Indianapolis (IN), November 4-6, 2007. They attended sessions on graduate program assessment, the National Survey of Student Engagement, and general assessment topics. No papers were presented.

8. Assessment "Levels of Implementation" Matrix

As in the past, members of the Assessment Committee have, in collaboration with the Faculty of their departments, filled out a "levels of implementation" matrix to evaluate the state implementation of the assessment plans of their department and of the University as a whole. As expected, there have been no significant changes from the high levels recorded 2006-07. The 2007 matrix is presented on the next page.

Assessment of Student Academic Achievement
Levels of Implementation: 2007 - 08

Departments	I. Institutional Culture		II. Shared Responsibility			III. Institutional Support		IV. Efficacy of Assessment
	a. Collective/Shared Values	b. Mission	a. Faculty	b. Administration & Board	c. Students	a. Resources	b. Structures	
Architecture	3	3	2.9	2.9	2.6	2.7	2.9	3
Art & Design								
Civil Engineering	3	3	3	3	2	3	2.5	3
Electrical & Computer Engineering	3	2.5	3	3	2	2.5	2.5	2.5
Mechanical Engineering	2.5	2.5	2.5	2.2	2.2	2.5	2.5	2.2
Engineering Technology								
Management (BSIT)	2	3	2	2	2	2	2	2
Management (BSBM/IM/TM)	2	3	2	2	2	2	2	2
Humanities, Social Science, Communication	3	3	3	2	2	2	3	3
Natural Sciences	2.5	2.5	2.5	2.25	2	2.25	2.5	2.25
Math & Computer Science	3	2.5	2.8	2.6	1.3	2.6	3	2.6
2007 - 08 Overall average	2.7	2.8	2.6	2.4	2.0	2.4	2.5	2.5
2006 - 07 Overall average	2.7	2.6	2.6	2.7	1.9	2.5	2.6	2.5
2004 - 05 Overall average	2.8	2.7	2.7	2.8	1.9	2.6	2.6	2.6
2003 - 04 Overall average	2.9	2.6	2.6+	2.6	1.9	2.6	2.7	2.4+
2002 - 03 Overall average	2.6	2.6	2.4	2.5	1.8	2.4	2.5	2.2+
2001 - 02 Overall average	2	2	1.7	2	1.7	1.8	1.6	1.6

Levels:	1,2,3
Level One:	Beginning Implementation Assessment Programs
Level Two:	Making Progress in Implementing Assessment Programs
Level Three:	Maturing Stages of Continuous Improvement

Departmental Assessment Reports

2007 – 2008 Academic Year

College of Architecture and Design

Department of Architecture

Architecture Department
Objectives and Outcomes Assessment Summary 2007 - 2008

Submitted :1-21-2009. Daniel Faoro, Assessment Committee, 2007/08
Interim Chair Architecture Dept. 2008/09
Ash Ragheb, Assessment Committee, 2008/09

1.Program Educational Objectives, Outcomes and Accreditation Status

The Department of Architecture offers two degrees: The Bachelor of Science in Architecture, the Master's in Architecture. The Educational Objectives and Outcomes for the Master of Architecture are established by the National Architectural Accreditation Board (NAAB). There are thirty-seven Performance Criteria for this program. The Master of Architecture holds a full six-year accreditation from NAAB, with the next accreditation visit scheduled for the spring of 2008.

2.Assessment Activities and Assessment Results

The following yearly plan was conceived during Fall 2007:
As a major assessment activity, at least one assessment goal will be assessed every semester. Assessment goals will be aligned with the NAAB 37 Student Performance Criteria. The Committee will continue to coordinate a yearly schedule as to which goals and which core courses are to be assessed every semester for the next few years in preparation for the next NAAB Accreditation visit. Every selected goal (i.e., performance criterion) will include outcomes, objectives, and assessment implementation strategies.

The committee will promote more active participation of the full-time architecture faculty in the aforementioned assessment efforts. For the last couple of years, the Architecture Assessment Committee members have volunteered to assess their classes. The committee will seek for other faculty members' assistance in assessing their courses in coming years.

As part of the ongoing debate among ACSA member schools regarding suggested revisions/clarifications to the current NAAB student performance criteria, the Committee will continue to assess and record COAD's evaluation of NAAB's criteria.

The Architecture Assessment Committee will continue to work in collaboration with the COAD Curriculum Committee concerning the review of the current curriculum during the academic year 2007-2008).

The Committee will continue to update the Architecture faculty on the ongoing and future activities of the Architecture and the University Committees. In addition, the Committee will engage the faculty in the assessment-related activities via e.mails, letters, and faculty meetings throughout the year.

3.Other items accomplished for the academic year 2007-2008

Fall 2007

1. Assessment of Two courses

The College is gearing up for the next NAAB Accreditation Review Team's visit in Spring 2008 and is in the process of developing a comprehensive plan for preparation this semester. Therefore, the selection and

assessment of courses should be based on and developed in conjunction with such plan as soon as it becomes available.Assessment planning sessions took place with Ed Orlowski, Architecture Dept. Chair, Daniel Faoro, Assessment Committee representative, and Dan Price, The EM/CAD Coordinator for the Architecture Program, to develop a survey tool administered to local - Detroit Metro area- architecture firms who employ LTU graduate students to assess the use computer technology in the field of architecture .

This falls under the heading of the LTU Undergraduate Goal:

> (I.2). *Graduates will demonstrate effective use of technology and the ability to apply it in their fields*.

The results are provided below under Appendix 1.

There was an additional departmental assessment of professional ethics planning session which was an outgrowth of the COAD Assessment Committee 9-21-2007 planned for the spring of 2008. This work involved ethical topics in the urban design sequence with participation by Professor(s) Joonsub Kim and Anirban Adyha- exam author.
In addition the Department and its faculty was preparing the Architecture Program Accreditation visit by NAAB in the Spring 2008 (March 2008).

This falls under the heading of the LTU Undergraduate Goal

> (V.2). *Graduates will have opportunities to develop personal values as the foundation of integrity and professional ethics*.

The results are provided below under Appendix 2.

Spring 2008

1. In conjunction with the Character Assessment initiative planned by the University Assessment Committee, the Architecture dept. assessment committee was implemented the assessment tool for the IDS4 Urban Design course.

2.The VITRIC staff, Linda Warek, assisted in placing the Computer knowledge employer survey on Blackboard, The survey was completed and tabulated by the end of the spring term and summarized over the Summer 08 year.

3. The University Character Survey was distributed via. E.mail to all COAD faculty and results were tabulated by Gayle Schaeff, dept. secretary, and returned to the Assessment Committee- Walter Dean, for 05/2007, and 09/2008 and response rates were not significant and not included in this report.

4. Action Plan for 2008-2009.

The Department of Architecture Assessment Committee will be chaired by Professor Ashraf Rageb during the 2008-2009 academic year. Professor Daniel Faoro, will be Interim Department Chair and coordinating assessment activities in the department**.**

Assessment of the university-wide educational goals

1. Writing and Oral Communication skills. The summer of 2008 the University writing skills subcommittee reviewed papers submitted in Spring 2008, by the Architecture Dept. (3000) level classes and compared results to 2003 writing skill assessments.

1a.The Department will participate in Oral Communication subcommittee assessment recommendations, which we anticipate to be recorded and graded observations of student studio presentations

2. Character Assessment: The Department will participate in the university wide 'Portrait Values" Character exams for Freshman,-Fall 2008, and Seniors-Spring 2009.

5. Department Accreditation Report

The Accreditation team completed their review in March 26, 2008 (Spring 2008) and replied on July 22, 2008 in a letter to President Walker from NAAB President Bruce E. Blackmer, FAIA with their accreditation findings and recommendations. The report granted the Professional Architecture Degree and Architecture Department a full six year term of accreditation, this is the maximum term which is granted.

Summary of National Architectural Accrediting Board Inc. (NAAB) report on Architecture Degree (M.Arch Degree) in which the courses for BS. In Architecture degree courses are reviewed and evaluated as meeting accreditation requirements. The NAAB as a matter of policy accredits only one program degree as 'the professional degree'.

The report cited the following areas of concern that require curricula or course modifications.

- NAAB Criterion (13.34) Ethics and Professional Judgement. The team comments suggest broadening and strengthening ethics course content in the program. *The dept. believes some existing ethics course content was not well documented in some courses but does exist currently in the curriculum. The dept. recommends reinforcement of ethics content at multiple levels of the program and is considering an ethics lecture in the Arch. And Art Appreciation class, documenting the ethics based exams for Urban Design classes in the Third year, requiring students to address the ethical issues in graduate studios and thesis work, and strengthening professional ethics in the graduate professional practice courses. A potential for a required ethics class to replace a senior level elective is under consideration.*

Writing Skills: The Team report cited "low level writing skills" in their report. *The department is considering ways to expand and increase writing skills in the history sequence, and in undergraduate and graduate studio courses . The required course work in the architecture and art history sequence was cited as problematic due to large class enrollment size and lack of adequate instructional resources to properly evaluate and implement writing based assignments in these courses. The dept. will also work closely with the university writing assessment committee to address the issue.*

- NAAB Criterion (13.14) Accessibility. The designation of handicapped parking stalls was lacking in our capstone course (AD5). *This was considered a minor issue in the dept. and easily remedied by reinforcement of appropriate graphic conventions*

The NAAB team report did report that 'Program self-Assessment Procedures were satisfied. The team recognized the faculty work within the University Assessment Committee and at the departmental and college level as satisfying this requirement.

Departmental Level Assessment Work Plan 2008/2009 year.

1. The faculty and administration will revise the program to address the integration of the new Leadership course work required by the university into the degree requirements. The issue is complex and requires further discussion and agreement.
2. Our student feedback efforts have indicated an ongoing concern for course work overloads in the third year of the program. A fourth year student survey is under development to identify problem areas in specific courses and overall coordination of course work in this year. The survey will be piloted with the student leadership group before being deployed to the fourth year student group. Program modifications will be based on input from this survey and faculty input and feedback.
3. Development of proposals to address the NAAB curricular issues cited above.
Our Graduate Faculty has met to review topics from the list above, and formed three sub-committees. The recommendations are expected to be completed by May 2009.

1. Professional Ethics and program integration

2. Handicapped Accessibility

3. Expansion and development of writing and oral communication in the curriculum.

College of Architecture and Design

Department of Art and Design

College of Architecture and Design
Art and Design Department
Objectives and Outcomes Report
2007 – 2008

The Art and Design Department offers two undergraduate degrees: a Bachelor of Arts in Imaging and a Bachelor of Science in Transportation Design.

The educational outcomes and objectives for the Bachelor of Fine Arts in Imaging are established and accredited by the National Association of Schools of Art and Design (NASAD).

The Bachelor of Science Degree in Transportation Design hs applied for accreditation by NASAD, as well, and is pending further review.

The BFA degree in Imaging is based on a broad foundation in the fine arts and visual communication with application to a variety of media and techniques to achieve creative solutions to design problems. The primary objective of the program is to apply creative design processes to the development of skills in hand drawing, graphic identities, photography, motion graphics and other new and emerging technologies that meet the needs of corporate and private enterprises.

The Bachelor of Science in Transportation Design program will develop advanced knowledge, skills and experience to lead design teams in developing vehicle concepts integrating marketing, ergonomics, engineering, manufacturing and sustainability in a global market.

An advisory council for the Imaging Program is in its second year of overseeing the goals and vision of the program in the areas of technology, practice, and education.

All in-house assessment activities support the University Educational Goals and Assessment Foci.

The following is a summary of assessment tools and performance used in each of our degree programs.

Learning objectives are written for each course and written performance appraisals for projects done in each course.

Student learning is constantly monitored during class sessions, at mid-term and in final reviews; wherein, oral, graphic and written presentations are required to demonstrate project intent.

Outside critics and jurors are invited to all student reviews and provide performance appraisals to students along with feedback conversation with program directors, coordinators and faculty.

There are professional evaluations of all capstone courses.

In design field, competitions replace national exams for our students to demonstrate knowledge and talent, as well as, effective use of advanced technologies, such as, Google Earth and BIM/REVIT, Photoshop, Illustrator, Indesign, Maya, After Effects, Catia, Delta Gen, and Alias.

External reviewers' comments during studio reviews are noted and serve as an informal survey of LTU employers and their perception of our students/ use of technology.

Class work is regularly exhibited in our classrooms, galleries and hallways. Often, the work is collected in portfolio style.

Our students enter design competitions locally and nationally. This year the Transportation Design students were awarded First Place in the Formula Zero Competition; Second and Third in Sabic Innovative Plastics Car Design Competition and were chosen as one of six international universities selected to compete in Ford Motor Company's Model T design Challenge.

Our students demonstrate creativity and critical thinking, as well as analytical and problem solving skills in a variety of course specific approaches.

The programs in COAD as a whole placed a priority on developing personal values as the foundation and professional ethics mandated by accrediting agencies ethics learning criteria.

Our success in instilling as sense of professional ethics is in part illustrated by out students' involvement in service learning and outreach programs.

There are internship requirements for each program and their results are continuously monitored to guide curriculum and course content.

Both BFA programs document how and when each program's course offerings accomplish the University's undergraduate educational goals. During the year, assessment participation by faculty who are not currently members of the Assessment Committee has been stressed and achieved.

College of Arts and Sciences

Department of Humanities, Social Sciences and Communication

(Owing to the death of the HSSC Assessment Committee representative for this year, Dr. Harold Hotelling, no report was received from this Department and it was deemed unfeasible to reconstruct assessment activities within this Department in the time available. These will be incorporated in the 2008-09 Departmental assessment report.)

College of Arts and Sciences

Department of Mathematics and Computer Science

Lawrence Technological University Assessment Program

Department of Mathematics and Computer Science
Annual Assessment Report for 2007 – 2008

Program Educational Objectives, Outcomes, and Accreditation Status

There is no professional accreditation for any of the programs offered by the department. The department's programs are accredited by the Higher Learning Commission of the North Central Association, as a part of the university's overall accreditation.

The following objectives are in place during the 2007-2008 academic year. A common set of educational objectives applies to all Bachelors of Science degree programs in the department. There is a set of educational objectives for the Mathematics Core curriculum that applies to all Lawrence Technological University students, and set of educational goals that applies to students in the Master of Science in Computer Science program.

Educational Goals for Bachelors of Science in Mathematics, Bachelors of Science in Computer Science and Mathematics and Bachelors of Science in Mathematics and Computer Science

In addition to the educational goals for the Mathematics Core, all Mathematics / Computer Science majors will:

1. possess problem-solving and modeling skills and be able to synthesize and analyze information in abstract as well as applied contexts
2. be able to effectively communicate mathematical and algorithmic ideas both orally and in written form
3. be able to learn new technologies
4. be able to secure employment and/or attend graduate school in their field, drawing on their experiences, both within and outside the major to become responsible citizens and effective professionals
5. learn to identify the knowns, unknowns, and principles needed to solve a problem. They will be able to obtain and verify solutions using symbolic, graphical and numerical techniques, and computer simulation, as needed.
6. have a complete understanding of a computer language ((syntax, semantics and terminology), be able to logically develop problem-solving algorithms, determine speed and memory requirements, and develop and debug complex code.

Educational Goals for Master of Science in Computer Science

All Master of Science in Computer Science graduates will:

1. Possess a thorough understanding of the theoretical comcepts and practical uses of computer science
2. develop crucial and creating thinking skills in mastering new topics required to understand and solve problems in the area of computer science

3. demonstrate a sufficient depth of knowledge in a substantive area of computer science to pursue advanced practical work in industry
4. have a very good written and oral communication skills especially in technical areas.
5. a comfortable and congenial environment should be created that encourages the interaction and exchange of ideas between students and faculty.

Educational Objectives for Mathematics Core (University-Wide)

All students will:

1. be placed in a mathematics course corresponding to their demonstrated skill level
2. possess mathematical problem-solving skills applicable to living in a global society
3. be able to synthesize and analyze information in applied contexts
4. be able to communicate ideas in mathematics both orally and in written form
5. be able to learn new technologies
6. be able to apply mathematical principles within their chosen discipline and as responsible citizens and effective professionals
7. be able to use and understand the use of symbolic and graphical techniques within their discipline

Assessment Activities and Assessment Results

1. Assessment of University Educational Goals During the 07 – 08 academic year, the following University Educational Goals were assessed:
    a. The first half of University Educational Goal II.4 "Graduates will demonstrate competence in mathematics and in the use of the scientific method and laboratory technique." Data was collected for the first time for MCS4663, Networks.
    b. No data was collected for the Operating Systems course
2. Assessment of educational goals for Mathematics and Computer Science majors
3. Assessment of educational goals for the University Mathematics Core
    a. Assessment of the educational goals for the University Mathematics Core was done by administration of a common final for Calculus 2 and Math Analysis 2.

       Loop-closing was done for the Calculus 2 objectives. Faculty deemed the scores too low and hypothesized that the explanation was the structure of the Calculus 2 course itself. The course contains two major topics, integration and series. The hypothesis is that the course focuses exclusively on series for the last part of the course, and students have lost proficiency in integration due to the blocking effect. The course topics will be re-ordered to validate or invalidate the hypothesis.
4. Assessment of educational goals for the Developmental Mathematics program. The Developmental Mathematics program is assessed annually to determine how accurately the placement exam functions as a predictor of student performance and how well the program prepares students for the undergraduate curriculum. Assessment is based on

student performance on a common final exam. Data were collected at the end of the Fall '07 and Spring '08 terms, and loop-closing was carried out.

5. Reformulation of Educational Objectives for the MCS programs. Program Educational Objectives were reformulated to include University Educational Goals, College of Arts and Sciences educational goals as well as program goals. Program goals were reviewed against ABET educational outcomes.
6. Assessment Plan for MSCS program. Work on an assessment plan for the MSCS program was begun. A revised set of educational goals has been drafted.

Action Plan for the following year

1. Continue data collection for CS, making sure that instructors are aware of and willing to participate in data collection.
2. Consider reordering Calc II topics so that the term ends with work on integral calculus rather series, to rule out the possibility that series are overlaying the calculus training.
3. Continue loop-closing for developmental math program

College of Arts and Sciences

Department of Natural Sciences

Department of Natural Sciences
Objectives and Outcomes Assessment
2007– 2008

1. Program Educational Objectives, Outcomes, and Accreditation Status

The Department of Natural Sciences offers two programs that are accredited by outside agencies. The B.S. in Chemistry (Option 1) is certified by the American Chemical Society, but this certification does not require ongoing assessment of objectives and outcomes.

The Master of Science Education program is accepted by the Michigan State Board of Education. While this acceptance is periodically renewed, it again does not require ongoing assessment of objectives and outcomes. Accordingly, the Department faculty set education objectives and outcomes based on the nature of the individual programs.

Beyond this, the Department participates in the general accreditation of the University by the North Central Association.

Educational Objectives and Outcomes are described in the Departmental Assessment Plan (attached).

2. Assessment Activities and Assessment Results

Attached are the Assessment Plans for the programs offered by the Department of Natural Sciences. Goals, Strategies, Indicators, and Timeline for the Chemical Biology, Chemistry, Molecular and Cell Biology, Physics are given in the form of a matrix. This and other relevant documents have been posted to the Assessment Blackboard site.

The 2007 – 08 academic year was a year of consolidation for assessment activities in the Department of Natural Sciences. We concentrated on minor refinements of the Assessment Plans and on solidifying the implementation of procedures begun in 2002 - 03.

Biology faculty developed the MCB program's assessment plan to be implemented in 2008-09.

MSE faculty are in the process of updating their assessment plan to fit the matrix format with updated indicators and timelines that correspond more with what is actually being done.

Chemical Biology:

This is a new program so most of the assessment of the programs goals will start in 2009 or beyond. The following are current program goals that have been assessed for this academic year. See plan for more information about timeline and goals.

II. Graduates are satisfied that they have been effectively prepared for their professional careers.

Courses BIO1213, BIO1223 and BIO2323 were assessed with both having over 80% "confident" and "very confident" overall of their mastery of the course objectives which meets the strategy set forth in the plan.

IV. Graduates will demonstrate skill in analytical and critical thinking appropriate to their discipline

IVb. Selected courses will include laboratory exercises in which students must plan experiments and understand results with minimal assistance.

Course BIO1221 and BIO1231 was assessed and had over an 80% "satisfactory" or "superior" performance satisfying the strategy set forth in the plan.

Chemistry and Environmental Chemistry:

The chemistry assessment plan was updated during the academic year 2007-08. Some assessment strategies have been modified to correspond with what is actually being done by the department.

I. Graduates demonstrate knowledge in five major division of chemistry: organic/biochemistry, inorganic chemistry, analytical chemistry, and physical chemistry.

Ib. The ETS exam was administered to all chemistry graduating seniors. Results have not been reported to departmental assessment coordinator at this time.

Ic The Chemistry Department needs to review of exit exam results along with reviewing how the chem. program corresponds to the questions asked on the ETS exit exam.

II. Graduates demonstrate competence/ appropriate to their program in use of modern laboratory instrumentation, chemical synthesis and chemical analysis, and use of the chemical literature. Courses evaluated:

CHM4632 - Instrumental Analysis lab

Students who passed each course with a C or better met course assessment strategy as qualified.

III. "Graduates will demonstrate skill in analytical thinking appropriate to their discipline." Also, students demonstrate written, oral, and visual communications skills appropriate to laboratory reports, technical writing, and public presentation of scientific information.

IIIa. Students will analyze and present a paper from the chemical literature to a panel of faculty and students and CHM4643 (Advanced InOrganic). The presentation component was evaluated by rubric and students achieved 80% "satisfactory" or "superior" performance.

IIIb. Selected courses will include laboratory exercises in which students must plan experiments and understand results with minimal assistance. The following course was evaluated:

CHM4632 - Instrumental Analysis lab

Students who passed the course with a C or better met course assessment strategy.

IIIc. Students wrote a paper as part of CHM4643 (Advanced Inorganic Chemistry). The writing component will be evaluated by rubric.

CHM 4643-100% achieved "satisfactory" or "superior" performance.

IV. "Graduates will feel that they have been effectively prepared for their professional careers."

IVa. Course objectives have now developed for all chemistry courses, including the freshman courses.

IVb. Surveys were written and administrated electronically for the following courses. All courses had student responses greater than 80% confidence in their mastery of the course objectives unless otherwise noted.

Course	Term	Course	Term
CHM1154/	Fa05	CHM3434	(not taught)
CHM3144	All (not surveyed at this time)	CHM3403	Fa07
CHM1213	All (not surveyed at this time)	CHM3411	Fa07
CHM1221	All (not surveyed at this time)	CHM3431	(not reported)
CHM1223	Sp08	CHM3441	Fa07 (not reported)
CHM1232	Sp08	CHM3442	(not taught)
CHM2313	Fa07	CHM3452	(not taught)
CHM2323	Sp08	CHM3463	(not taught)
CHM2332	Sp08 (not reported)	CHM3623	(not taught)
CHM2342	Fa07	CHM4522	(not taught)
CHM2352	Fa07	CHM4542	(not taught)
CHM3383	(not taught)	CHM2631/	Sp08(not taught)
CHM4643	Sp08	CHM4631/4632	Sp08
CHM3423	(not reported)	CHM4723	(not taught)

CHM4843 Sp07 (not taught)

Unfortuanately after several attempts to get survey results, fouir courses were not reported for this academic year.

IVc. The Department Chair informally interview each graduating senior about our programs.

No graduates.

V. "Graduates will be able to work in teams, and will have opportunities to develop leadership abilities."

After some departmental discussion, it was decided that this goal should be addressed in detail only after the University Assessment Committee has considered the questions of leadership development and teamwork at LTU.

Physics:

I. "Graduates will demonstrate knowledge in the following areas of Physics..."

Ia. The ETS exam was administered to all physics graduating seniors. Results expected in Fall '08.

II. "Graduates are satisfied that all areas of Physics listed in goal (I) above have been competently taught."

IIa. Physics faculty have developed an exit survey to be given to all graduating physics seniors. Not clear if this was administered in the Spring '08.

IIb. . Students in selected courses will be surveyed at the end of the term as to whether these objectives have been met.

Surveys were written and administrated electronically for the following courses. All courses had student responses equal to or greater than 80% confidence in their mastery of the course objectives.

PHY1213/1221	PHY3653	
PHY2213/2221	PHY3661	
PHY2223	PHY4724	(no results at this time)
PHY2413/2421	PHY4743	(not taught)
PHY2131	PHY4763	(not taught)
PHY2423/2431	PHY4781	(not taught)
PHY3414	PHY4823	

Other physics courses not on this list have not been surveyed at this time.

III. Graduates demonstrate competence in using modern laboratory instrumentation in the physics labs.

PHY3661 – Contemporary Physics Lab . 80% or above received qualified .

IV. Graduates will demonstrate skill in analytical thinking appropriate to Physics which includes data analysis. They will also demonstrate written, and visual communications skills appropriate to laboratory reports, technical writing.

PHY3661 – Contemporary Physics Lab . B+ or better achieved on lab reports .

V. "Graduates will demonstrate the ability to do independent theoretical or experimental research…"

Successful completion of Physics Project courses (PHY4912 and PHY4922)

VI. "PHY1154 (Introduction to Physical Principles) students will be adequately prepared for PHY2413 (University Physics 1) and PHY2213 (College Physics 1)."

VIb. PHY1154 grade / PHY2213 & PHY2413 grade correlation study: Analysis of grade data in these two courses is being repeated with a larger grade database. Results so far indicate that a majority of students getting a C or better in PHY1154 are also getting a C or better in PHY2413. The percentage of students meeting this objective has been finished and the objective of 80% is being met.

VIc. PHY 2213 and PHY2413 "Force Constant Inventory" pre-post test: Analysis of the results shows an increase in average and normalized scores, with greater increases for students with low scores on the pre-test. This indicates that this objective is being met.

VII. "Graduates will be able to work in teams, and will have opportunities to develop leadership abilities."

After some departmental discussion, it was decided that this goal should be addressed in detail only after the University Assessment Committee has considered the question of leadership development at LTU. Some preliminary work has been done to prepare checklists for evaluating leadership in PHY3661 and PHY4781.

Master of Science Education:

Assessment of the MSE program assessment plan is still a work in progress. Evaluation of the plan will begin in 2008-09.

3. Action Plan for 2008 – 2009

The action plan for the Department of Natural Sciences for 2008 – 2009 will be to review and refine the Departmental Assessment Plan as the department gains experience. The plan will be adjusted to adapt for the university goals of assessing leadership and teamwork objectives. Further efforts will be made to increase performance in administering surveys, etc and a departmental database. Also, the completion of the MSE program's assessment plan.

College of Engineering

Department of Civil Engineering

Civil Engineering Department
Objectives and Outcomes Assessment
Summary 2007-2008

1. Program Educational Objectives, Outcomes, and Accreditation Status

The Department of Civil Engineering revised its Objectives and Outcomes during the 2007-2008 Academic year. The decision was made by the Department with feedback from students and the Advisory Board to align our objectives and outcomes unchanged based on the ASCE Body of Knowledge 2nd Edition (BOK2). A revised assessment plan based on the BOK2 is being devised for the 2008-2009 Academic Year. The degree is accredited by ABET and was visited during October of 2004. The program received a full six year accreditation cycle from ABET.

A. Assessment Tools for 2007-2008

Table I: Assessment tools, description, and performance criteria.

Assessment Tool	Description	Performance Criteria
FE Exam	The FE Exam is a nationally normed exam that provides a direct measurement of student abilities on a topic-by-topic basis. It provides a comparison between LTU examinees and the corresponding results from comparison institutions on a topic-by-topic basis. This emphasizes strong and weak points within the program.	Perform at or above the national average for comparative Carnegie Master institutions.
Exit Interview	The chair conducts exit interviews of graduating students. The exit interviews provide a summative view of what is happening in the department and gives an indication of overall student satisfaction. The exit interview includes a survey form to be filled out by students regarding their education at LTU.	Qualitative evaluation of student satisfaction and concerns. Qualitative as well as direct evidence that we are meeting our outcomes based on survey form.
Advisory Board Interviews	The Advisory Board conducts a group interview or panel discussion of 12 to 15 senior students during Senior Projects Day.	General satisfaction by the Advisory Board that the students meet the published outcomes of the department.
Professional Evaluation of Senior Projects Day	Advisory Board members (and Employers) are invited to attend Senior Projects Day (Spring Semester) to view and evaluate oral presentations of senior projects. Written evaluations of the Senior Design Projects/Presentations are requested from attendees.	General satisfaction by the Advisory Board (and/or employers). A minimum of a 3.5 on a 5 point scale.
Faculty Evaluation of Senior Projects Day	Similar to evaluation of senior projects by Advisory Board however, faculty evaluate Senior Design presentations in both semesters.	General satisfaction by the Faculty. A minimum of a 3.5 on a 5 point scale.
Course Objectives	Learning objectives have been written for each undergraduate civil engineering course. Students are surveyed on their ability to perform objectives at the conclusion of the course.	85% of the students surveyed are capable of performing the desired outcome.
Direct Assessment	Direct assessment of student learning in specific courses.	A minimum of a 3.5 on a 5 point scale.
Writing Proficiency Exam	A university side assessment of student written communication abilities that serves as a gateway to senior status. All students must pass the exam or complete an additional composition course.	All students must satisfy this criteria to graduate.

B. Assessment Results for 2007-2008

During the 2007-2008 academic year, eight assessment tools were used to determine if the Program Outcomes are being achieved as indicated in Table I and Table II. With respect to student achievement of individual Program Outcomes, each assessment tool utilized by the department addresses multiple Program Outcomes. Additionally, multiple assessment tools are used to measure each outcome. Therefore, to determine if the Program Outcomes are being met, it is important to systematically consider the entire assessment plan. To accomplish this task, a matrix is generated that indicates the level of student attainment of an outcome based on that particular tool.

The matrix for this academic year is represented in Table II. For a given assessment tool, a number from 1 to 5 was assigned to each outcome that tool is designed to assess. A 1 indicates a low level of student attainment and a 5 a high level of student attainment. These numbers were consensually determined by the faculty based on the results and were limited to half point increments. These values were then used to determine an overall "score" for each program outcome. The overall ranking is not based on an arithmetic mean, but rather a subjective weighting based on faculty input. It is important to note these values are determined by faculty consensus. The faculty decided that any overall score higher than a 3.5 meets program criteria. A score of 3.5 meets the criteria, but with some concern and a 3.0 or lower indicates that the outcome is not obtained for the academic year. From Table II, it can be seen every Program Outcome met faculty expectations for the given academic year with only one outcome (Outcome m) receiving less than a 4.0. While the faculty believe Outcome (m) is being met, it did not receive a 4.0 or higher because of the direct assessment of ECE3523 which assigned a 2.0.

In addition to assessment of student learning, the department also conducts assessment of student satisfaction with the program. As such, one of the key features of the assessment program is the utilization of our advisory board to evaluate our senior projects and then interview a sample of our graduating students. This provides a direct assessment evaluation of our students capabilities as well as provides a chance for the students to meet directly with and provide feedback to the advisory board. Feedback from the advisory board was very positive for this academic year. Another assessment of overall student satisfaction is the exit interviews with graduating seniors. Overall, the results from the exit interviews were positive.

Table II - Assessment/Outcome Matrix – 2007 – 2008 Academic Year

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Exit Interviews Fall 20071						-		-	-	-			-
Exit Interviews Spring 2008						4		4.5	5	5			5
Advisory Board Interviews							4						
Advisory Board Senior Project Spring 2008			4.3	4.0	4.4		4.1			4.1	4.2		
Faculty Senior Project Spring 2008			4.6	4.7	4.7		4.4			4.0	4.5		
Senior Project Oral Pres & Final Report							4						
Course Objectives Spring 2008	4	4	4	4	4	4	4	4	4	4	4	4	4
Course Objectives Fall 2007	4	4	4	4	4	4	4	4	4	4	4	4	4
Direct – ECE4761	4	5			4		3.5				4	4	
Direct – ECE3523(fall only)	5				4						3		2
Direct – ECE3424	5	5	5	4	4		4		3		5	4	3
Performance Appraisal – ECE3013	2				2								
OVERALL	**4.0**	**4.5**	**4.5**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**3.5**

Note: the rankings are on a scale from 1 to 5 with 5 being the highest level of attainment. The numbers are assigned with faculty consensus in 0.5 increments. The OVERALL ranking is not based on an arithmetic mean but rather a subjective weighting based on faculty input.

Interpretation: 4+ meets program goals

3.5 meets program goals, but with some concern

3 or lower indicates outcome not obtained for academic year

I indicates incomplete for the given item

1 Only one student graduated in December 2007. This student did complete an exit interview with positive comments about the Department but is not included in this table because of the sample size.

Incomplete or Postponed Activities

There was one incomplete activity based on our regular assessment of student learning and satisfaction. A survey of recent alumni to determine program objective obtainment is past due and will be conducted in the spring of 2009. In addition, formal direct assessment of student learning is maturing and will change according to the new BOK2 based Program Outcomes.

B. Action Plan for 2008-2009.

The Civil Engineering Department has a comprehensive Assessment Plan in place to assess student learning, graduate capability to perform published program outcomes, and overall student satisfaction with our program, our facilities, and our instruction. The Assessment Plan is reviewed and adjusted annually by the Civil Engineering faculty under the guidance of the Coordinator of the Civil Engineering Assessment Program, Dr. Donald Carpenter. A timeline based on previous assessment plan can be found in Table III. A revised assessment plan is still be formulated.

Table III Civil Engineering Department Assessment Timeline

Assessment Description	**Fall 2006**	**Spring 2007**	**Fall 2007**	**Spring 2008**	**Fall 2008**	**Spring 2009**	**Fall 2009**	**Spring 2010**
1) Exit Interview and Survey	X	X	X	X	X	X	X	X
2) Advisory Board Interviews		X		X		X		X
3) Professional Senior Project Evaluations		X		X		X		X
4) Faculty Senior Project Evaluations		X		X		X		X
5) Faculty Senior Project Progress Evaluations	X	X	X	X	X	X	X	X
6) Course Objectives	X	X	X	X	X	X	X	X
7) Performance Appraisals (Case Dependent)	X	X	X	X	X	X	X	X
8) Direct Assessment	X	X	X	X	X	X	X	X
9) Focus Groups	X				X			
10) COM3000 Writing Proficiency Exam	X	X	X	X	X	X	X	X
11) FE Exam			X				X	

Appendix A

Civil Engineering Program Objectives and Outcomes
2002 – 2008

Civil Engineering Program Educational Objectives

The following italicized paragraph represents the current and published Program Educational Objectives for the Civil Engineering Department at LTU:

The mission of the Civil Engineering Department is to offer a program directed toward a broad, high quality, contemporary, baccalaureate educational experience in the civil engineering discipline, in parallel with the guiding principle of the university of "Theory and Practice." The objectives are to offer a program:

- *designed to provide students with a strong understanding of the fundamental principles of engineering;*
- *where students have the ability to identify the problem, formulate and analyze engineering alternatives, and solve the problem individually as well as in a team environment;*
- *that prepares students to apply contemporary computer based skills for the solution of civil engineering problems;*
- *that prepares students to effectively communicate in a professional engineering environment;*
- *that stresses all aspects of professionalism including the need for professional development through life-long learning and the benefits of becoming a licensed professional engineer.*

Civil Engineering Program Outcomes

The following italicized paragraph represents the published Program Outcomes for the Civil Engineering Department at LTU:

The Civil Engineering Department at Lawrence Technological University will offer a program in which our graduates have:

(a) an ability to apply knowledge and principles of mathematics, science, and engineering in the solution of civil engineering problems
(b) an ability to design and conduct experiments, as well as to analyze data and interpret results
(c) an ability to design a civil engineering system, component, or process to meet desired project needs
(d) an ability to function on multi-disciplinary teams including participation in a senior-level design project sequence
(e) an ability to identify, formulate, analyze, and solve engineering problems
(f) an understanding and appreciation of all aspects of professionalism including ethical responsibility, participation in professional organizations, and service
(g) an ability to communicate effectively developed through report writing and in-class presentations
(h) the broad education necessary to understand the impact of engineering solutions in a global, sustainable, and societal context
(i) a recognition of the need for, and an ability to engage in life-long learning
(j) a knowledge of contemporary issues
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
(l) an ability to apply the fundamentals of civil engineering to the analysis of an existing project component
(m) an understanding of the benefits of passing the FE exam and becoming a licensed professional

Appendix 8

Civil Engineering Program Objectives and Outcomes 2008 – present

Civil Engineering Program Educational Objectives

The following italicized paragraph represents the current and published Program Educational Objectives for the Civil Engineering Department at LTU:

The mission of the Civil Engineering Department is to offer a program focusing on a broad, high quality, contemporary, baccalaureate educational experience in the civil engineering discipline, in parallel with the University's guiding principle of "Leadership Through Theory and Practice." The objectives 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 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 committing to professional development through life-long learning and licensure; and*
- *encourages community and professional service, and the need to act ethically in all matters.*

Civil Engineering Program Outcomes

Outcome number and title	To graduate with a B.S. Degree in Civil Engineering from Lawrence Technological University and enter the practice of civil engineering, an individual must be able to demonstrate this level of achievement for each of 24 Program Outcomes[i].
Foundational Outcomes	
1 Mathematics	***Solve*** problems in mathematics through differential equations and ***apply*** this knowledge to the solution of engineering problems. **(L3)**
2 Natural sciences	***Solve*** problems in calculus-based physics, chemistry, and geology and ***apply*** this knowledge to the solution of engineering problems. **(L3)**
3 Humanities	***Demonstrate*** the importance of the humanities in the professional practice of engineering. **(L3)**
4 Social sciences	***Demonstrate*** the incorporation of social sciences knowledge (such as economics) into the professional practice of engineering. **(L3)**
Technical Outcomes	
5 Materials science	**Use** knowledge of materials science to ***solve*** problems appropriate to civil engineering. **(L3)**
6 Mechanics	**Analyze** and solve problems in solid and fluid mechanics. **(L4)**
7 Experiments	***Specify*** and ***design*** an experiment to meet a specified need; conduct the experiment and analyze, interpret and ***explain*** the resulting data. **(L5)**
8 Problem recognition and solving	***Develop*** problem statements and solve both well-defined and open-ended civil engineering problems by ***selecting*** and applying appropriate techniques and tools. **(L4)**
9 Design	***Design*** a system of process to meet the desired needs within such realistic constraints as economic, environmental, social, political, ethical, health and safety, constructability, and sustainability. **(L5)**
10 Sustainability	***Apply*** the principles of sustainability to the design of traditional and emergent engineering systems and ***explain*** how civil engineers should strive to comply with the principles of sustainable development in the performance of their professional duties. **(L3)**
11 Contemporary issues and historical perspectives	***Explain*** the impact of historical and contemporary issues on the identification, formulation, and solution of engineering problems and ***explain*** the impact of engineering solutions on the economy, environment, political landscape, and society. **(L3)**
12 Risk and uncertainty	***Apply*** the principles of probability and statistics and solve problems containing uncertainty. **(L3)**
13 Project management	***Analyze*** a proposed project and ***formulate*** documents for incorporation into the project plan. **(L4)**
14 Breadth in civil engineering areas	***Analyze*** and solve well-defined engineering problems in at least four technical areas appropriate to civil engineering. **(L4)**
15 Technical specialization	***Apply*** specialized tools or technologies to solve problems in traditional or emerging specialized technical areas of civil engineering. **(L3)**

Professional Outcomes	
16 Communication	***Plan, compose,*** and ***integrate*** the verbal, written, virtual, and graphical communication of a project to technical and non-technical audiences. **(L5)**
17 Public policy	***Discuss and explain*** key concepts and processes involved in public policy. **(L2)**
18 Business and public administration	***Explain*** key concepts and processes used in business and public administration. **(L2)**
19 Globalization	***Explain*** global issues related to professional practice, infrastructure, environment, and service populations (as they arise across cultures, languages, and countries) **(L2)**
20 Leadership	***Explain*** leadership principles and attitudes and ***apply*** those principles and attitudes when making decisions and directing the efforts of a small group. **(L3)**
21 Teamwork	***Function*** effectively as a member of an intra-disciplinary team and ***evaluate*** the performance of the team and individual team members. **(L3)**
22 Attitudes	***Explain*** attitudes supportive of the professional practice of civil engineering. **(L2)**
23 Life-long learning	***Demonstrate*** the ability for self-directed learning and ***identify*** additional knowledge, skills, and attitudes appropriate for continued professional practice. (**L4)**
24 Ethical & Professional Responsibility	***Explain*** the many aspects of professionalism and what it means to be a member of the civil engineering profession. and ***Analyze*** a situation involving multiple conflicting professional and ethical interests to determine an appropriate course of action. **(L4)**

[1] **Key: L1** through **L6** refer to these levels of achievement based on Bloom's Taxonomy:
- Level 1 **(L1)** - Knowledge
- Level 2 **(L2)** - Comprehension
- Level 3 **(L3)** - Application
- Level 4 **(L4)** - Analysis
- Level 5 **(L5)** - Synthesis
- Level 6 **(L6)** - Evaluation

College of Engineering

Department of Electrical and Computer Engineering

Electrical and Computer Engineering Department

Assessment Report 2007-2008

Program Educational Objectives, Outcomes and Accreditation Status

The department of Electrical and Computer Engineering is continuing its assessment activities since the major accreditation visit in Fall 2004 from ABET (Accrediting Board of Engineering and Technology), which resulted in the accreditation of both the Electrical Engineering and the Computer Engineering program until Fall 2010. The department of Electrical and Computer Engineering solicits assessment data from the following:

- Students
- Faculty
- Alumni
- Employers
- Industrial Advisory Board (IAB)

The department of Electrical and Computer Engineering (ECE) has developed the following mission statement in the form of "Educational Objectives of ECE" which is posted on the website of the department (http://ltu.edu/engineering/electricalandcomputer/ece_objectives.asp) and in the catalog.

To graduate electrical/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;
4. are prepared to undertake graduate study.

This mission statement was revised by our IAB and it is planned to be reviewed in November 2009.

The Electrical and Computer Engineering department also regularly revises its educational outcomes. In Fall 2009, the LTU Electrical and Computer Engineering Programs educational outcomes were revised as follows.

The outcomes of Electrical and Computer Engineering department are:

Outcomes of Electrical Engineering

(a) an ability to apply knowledge of mathematics, science, and engineering
(b) an ability to design and conduct experiments, as well as to analyze and interpret data
(c) 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
(d) an ability to function on multidisciplinary teams
(e) an ability to identify, formulate, and solve electrical engineering problems
(f) an understanding of professional and ethical responsibility
(g) an ability to communicate electively
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
(i) a recognition of the need for, and an ability to engage in life-long learning
(j) a knowledge of contemporary issues
(k) an ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering Practice
(l) an ability to plan, design, simulate, fabricate, construct, and test circuit hardware

Outcomes of Computer Engineering

(a) an ability to apply knowledge of mathematics, science, and engineering
(b) an ability to design and conduct experiments, as well as to analyze and interpret data
(c) 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
(d) an ability to function on multidisciplinary teams
(e) an ability to identify, formulate, and solve computer engineering problems
(f) an understanding of professional and ethical responsibility
(g) an ability to communicate electively
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
(i) a recognition of the need for, and an ability to engage in life-long learning
(j) a knowledge of contemporary issues
(k) an ability to use the techniques, skills, and modern engineering tools necessary for computer engineering practice
(l) an ability to plan, design, simulate, fabricate, construct, and test circuit hardware

(m) an ability to plan, design, test, and debug systems consisting of both software and hardware

Assessment Activities and Assessment Results

A. Students

Every year the LTU-ECE students participate in several methodologies of assessments as described in details below.

I. Direct Assessment

There are two direct assessment tools actively in use; these include FE-style exams given in select courses, and the direct evaluation of the senior project capstone project design sequence. The FE-style direct assessment tool has been designed so that almost all the outcomes are directly addresses by one or more of the exams in the tool. Since most outcomes are covered, this assessment tool is considered to be the major assessment tool in the program. For each of the core courses, courses coordinators (see attachment I & II) will verify that the exam will address one or more of specific mentioned outcomes. A high score means that most students in all sections of the course answered the question correctly. This means that the outcomes addressed by the question have been demonstrated. A low score on the other hand implies the outcome has not been achieved, and corrective action of the some sort is indicated.

Also, the direct assessment is used to ensure the individual program outcomes are presented in the courses at an appropriate level, and that all outcomes are sufficiently covered by the program.

II. Assessment of the faculty and course

At the end of each course, the instructor will pass an evaluation sheet to the students which gets administrated by a volunteer student from the class. Six questions are typically scrutinized:

- The instructor follows the course syllabus.
- The instructor's classroom presentations are well prepared.
- The instructor is willing and able to answer questions during and outside of class.
- The instructor is willing and available to give assistance outside the classroom.
- The level of feedback on graded assignments is appropriate.
- How would you rate the instructor's overall performance?

The scale is 0-4. Numbers are over two are considered 'good', and numbers under one are considered 'bad'. The numbers between 1 and 2 are considered average. This tool is primarily utilized to screen faculty members by the chairman and possibly dean to identify potential problems.

III. Exit Interview prior to graduation

Dr. Anneberg had conducted, processed, and analyzed an exit interview in October 9, 2007. The questions and the summary of the finding follow:

	Questions	Results and Analysis October 09, 2007	Results and Analysis October 14, 2008
1	What is your career plan after your graduation from LTU?	100% have work plans [two are specific: Honda Corp and embedded software engineer]	100% employed or grad school, 62.5% job, 37.5% school
2	What courses, programs, labs, projects have prepared you most for your career plan?	Tech Electives, upper level classes, Circuits 1, Circuits 2, Digital Electronics and lab, Advanced Digital Electronics and lab, Embedded and lab, all of them, C/C++	100% mentioned one or more: classes: Electrical Machines, Intro to Elec Sys, Digital, Micro, Programming classes, operating systems, Comm Sys, EMF, Control, ACAL, Electronics lab, Circ 1&2, calc 1, process control, coop, electronics and lab, micro, digital, embedded, electronics, controls, acal, all.
3	In how many 'team projects' have you participated in at LTU?	Team leader, Senior projects	senior projects, 100%
4	Have you taken the Fundamentals of Engineering [FE], Professional Engineering [PE] or other standardized engineering tests outside the school?	75% plan to take it within a year.	75% yes, 25% no
5	Have you attended any non-technical, societal or community activities as an LTU engineering student?	75% no, 25% yes [SWE, Chi Omega Rho]	50% yes, 50% no
6	Are you aware of engineering affiliations or societies related to your major?	100% yes	100% yes: IEEE, Eta Kappa Nu, SHPE [hispanic engineers], SWE
7	Have you participated in any significant learning/working experiences - outside or required course actives - to enhance your engineering abilities?	50% yes: work every day, internship with DCX	37.5% no, 62.2% yes - jobs and coop

B. Faculty

Each LTU-ECE professor has an assignment for the LTU-ECE CQI process:

- Dr. Richard Johnston – department chair, oversees the department's CQI efforts, and orginize the IAB.
- Dr. Lisa Anneberg – computer engineering subcoordinator, several courses coordinator, and graduating senior exit interview.
- Dr. Rakan Chabaan - several courses coordinator and alumni survey.
- Dr. Mike Cloud – Coordinator of entire department CQI efforts.
- Dr. Robert Farrah - courses coordinator.
- Prof. Ron Foster - courses coordinator.
- Dr. Mazin Sliety – several courses coordinator and employer survey.

C. Alumni

Alumni survey report is in progress.

D. Employers

An interview is typically arranged with high level personnel in several companies that hire LTU electrical engineering graduates. The objective is to determine how well-trained the LTU engineers are compared to engineers from other universities. High level personnel in eight companies were surveyed, covering a two-year period from 2007 to 2008. A total of ten questions are included in the survey, covering outcomes 1 through 7, and 9. The response to the survey was very positive. All questions are ranked from 0 (not satisfactory), 1 (Satisfactory), 2 (Above Average), and 3 (Exceptional). Summarizing the results, all respondents rated each survey question on average between 2 and 3, indicating they are very satisfied with the overall performance of the LTU graduates. The average ratings ranged from 2.12 to 2.62, an overall good response. One of the employer stated "We are very happy with LTU graduate performance and his work ethics. He is a dependable engineer who can work independently". The ECE department is striving to keep the practical abilities of graduating student's high-quality. A summary of Employers responses is listed in Table 1 (see attachment III).

E. Industrial Advisory Board (IAB)

Several of our advisory board members were present in our annual IAB meeting which was held on November 18, 2008 in room M209. The meeting consisted of two main sessions. The first session was a presentation by Dr. Sliety and Dr. Chabaan during which they shared with the committee their research plans and recent funding. Second, a breakout session that was led by Dr. Johnston. The primary focus of the breakout session was to generate several combined

performance criteria and a scoring rubric, which is a description of how to judge the performance of the criterion. Dr. Johnston reiterated that our Department's goal is for each program outcome to generate significant performance criteria that would be useful in all the courses covered.

Conclusion and Future Plan

The LTU Electrical and Computer Engineering department will continuously improve, and has a detailed plan outlined for accomplishing this task (see attachment IV). Assessment of the outcomes is a part of the plan, and must continuously be undertaken in order to ensure that the mission, the stakeholders, and the LTU-ECE department remain responsive to the changing environment. The assessment policies put in place assure that the department will not "let its guards down" after the ABET visit, but keeps its continuous quality improvement and assessment culture up to par. The outlook for the success of future process improvement based on the regular feedback from the assessment of constituencies remains positive.

Attachment I

Core Courses

Electrical Engineering

	a	b	c	d	e	f	g	h	i	j	k
intro to ece	2	2		3	2	3	2	3	3		
intro to projects	2	2		2		3	3	2			
digital electronics & lab	3	3	3	3	3		2		2	3	2
circuits 1	3	2	2		3						3
circuits 1 lab	3	3	2	2	2		3				2
circuits 2	3	2	2		3						3
microprocessors	2		3		2					2	2
microprocessors lab	2		3		2					2	2
electronics	3	2	3		3				3		2
electronics lab	3	2	3		3				3		2
control systems	3		3		3		2		3	2	2
senior projects 1	3	2	3	3	3		3				3
senior projects 2	3	2	3	3	3		3				3

Computer Engineering

	a	b	c	d	e	f	g	h	i	j	k
intro to ece	2	2		3	4	3	2	3	3		
intro to projects	2	2		2		3	3	2			
digital electronics & lab	3	3		3			2		2	3	
circuits 1	3	2	2		3						3
circuits 1 lab	3	3	2	2	2		3				2
circuits 2	3	2	2		3						3
microprocessors	2		3		2					2	2
microprocessors lab	2		3		2					2	2
electronics	3	2	3		3				3		2
electronics lab	3	2	3		3				3		2
embedded systems	3	2	3	3	3				3	3	3
control systems	3		3		3		2		3	2	2
senior projects 1	3	2	3	3	3		3				3
senior projects 2	3	2	3	3	3		3				3

Attachment II

Course Coordinators

EEE number(s)	Title(s)	Coordinator
1002	Intro to ECE	Sliety
2114 & 2111	Circuits 1 & Lab	Cloud
2123	Circuits & Electronics	Anneberg
2214	Digital Electronics & Lab	Anneberg
3011	Intro to ECE Projects Sr Proj	Committee
3123 & 3121	Circuits 2 & Lab	Cloud
3223 & 3221	Advanced Digital Electronics & Lab	Anneberg
3233 & 3231	Microprocessors & Lab	Chabaan
3314 & 3311	Electronics & Lab	Sliety
3414	Electromagnetic Fields & Waves	Cloud
3422	Advanced Computer Applications Lab	Johnston
3513 & 3511	Intro to Electrical Systems & Lab	Johnston
4133 & 4131	Electrical Machinery & Lab	Johnston
4153 & 4151	Electric Drives & Lab	Johnston
4243 & 4241	Embedded Systems & Lab	Farrah
4253	Computer Architecture	Farrah
4263 & 4261	Computer Networking & Lab	Anneberg
4273	Real Time Systems	Anneberg
4323 & 4321	Advanced Electronics & Lab	Sliety
4333	Automotive Electronics	Asik
4343	Electronic Noise Reduction	Johnston
4423	Communication Systems	Cloud
4433	Antennas & Radiation	Cloud
4513 & 4511	Control Systems & Lab	Chabaan
4543 & 4541	Process Control & Lab	Johnston
4583	Instrumentation & Sensor Tech	Chabaan
4713	Optoelectronics	Cloud
4812 & 4822	EE Senior Projects 1 & 2 Sr Proj	Committee
4832 & 4842	CE Senior Projects 1 & 2 Sr Proj	Committee

Attachment III

Table 1: Employers Responses

Employer name	Q.1	Q.2	Q.3	Q.4	Q5	Q6	Q7	Q8	Q9	Q10
Robert Bosch LLC	3	2	2	2	1	2	3	2	1	2
General Dynamics Land Systems (GDLS)	3	2	3	3	2	3	2	3	3	3
Harman/Becker Automotive Systems	1	1	0	1	1	0	0	2	1	1
LAWRENCE TECH University	3	3	3	3	3	3	3	3	3	3
Continental Corporation	2	1	2	2	2	2	1	2	2	2
Agilent Technologies	3	3	3	3	3	3	3	3	3	3
HARADA INDUSTRY of AMERICA	3	3	3	2	3	3	3	3	3	3
Masco Corporation	3	2	3	2	2	2	2	3	3	2
Average	**2.62**	**2.12**	**2.37**	**2.25**	**2.12**	**2.25**	**2.12**	**2.62**	**2.37**	**2.37**

Attachment IV

Assessment Schedule

Constituency	Type	Timing
student	classroom, direct	odd-numbered academic years
	classroom, indirect	even-numbered academic years
	exit interviews	upon petition to graduate
employer		every 3 years
alumni		every 3 years
advisory board		every fall

Annual Timeline

Week 2	Course coordinators check all current syllabi for compliance with official ABET syllabi.
Week 3	Collated (previous-semester) course survey data and instructor recommendations received by (1) relevant course coordinators, (2) Prof Anneberg, and (3) Reka. Previous-semester direct assessment tests graded and summarized. All syllabi submitted to Reka for distribution to course coordinators.
Week 4	All syllabi have been checked against CQI syllabi by course coordinators.
Week 5	Course survey and direct assessment data archived.
Week 10	CQI syllabus changes proposed by course coordinators and subjected to faculty vote.
Week 13	Classroom survey forms and direct assessment tests made available to faculty.
Week 14	All revised CQI syllabi archived for the semester.
Week 15	Classroom survey and direct assessment tests administered.
Week 16	(Finals week.) Ungraded direct assessment tests returned to Reka.

Once a Year: everything else, at Annual Program Review

1. Examine/review
   (a) graduating senior exit survey data
   (b) alumni survey and/or focus group data
   (c) employer and coop survey forms
   (d) IAB comments/suggestions
   (e) faculty comments/suggestions
2. Revisit program objectives and outcomes.
3. Get progress report on status of self-study report.

College of Engineering

Department of Engineering Technology

Engineering Technology Department
Objectives and Outcomes Assessment
Summary 2007-2008

1. Program Educational Objectives, Outcomes and Accreditation Status

The Engineering Technology Department is assessing its classes to assure that they meet the requirements for Higher Learning Commission and ABET. The department is addressing the requirements for ABET accreditation. The department is responsible for four associate degree programs and two bachelor programs. The associate degree programs are:

- Associate of Science in Communications Engineering Technology
- Associate of Science in Construction Engineering Technology
- Associate of Science in Mechanical Engineering Technology
- Associate of Science in Manufacturing Engineering Technology

The two bachelor degree programs are

- Bachelor of Science in Engineering Technology
- Bachelor of Science in Construction Management

The faculty within the department includes:

Kenneth Cook	Department Chairman
William White	Associate Professor
Sabah Abro	College Professor
Jerry Cuper	Advisor and Adjunct Professor
Tamera Dafoe	Adjunct Professor
William Kuziak	Adjunct Professor
Anthony Kelso	Adjunct Professor
Ahmad Kassem	Adjunct Professor
Robert Bernhard	Adjunct Professor
John Kushner	Adjunct Professor
Greg Yawson	Adjunct Professor
Sandford Lutz	Adjunct Professor
Harry Papadoupolis	Adjunct Professor

The support staff includes:

Angelina Card	Administrative Assistant
Tom Powder	Lab Technician

2. Assessment Activities and Results

Assessment Activities

During the 2007-2008 academic year the department is identifying new methods and objectives and applying existing procedures for assessment. Approximately 2/3 of all classes apply at least one method of assessment evaluation.

a. Team work was examined within the classroom setting. Furthermore, leadership was also examined. If there was teamwork within the classroom then is was possible to examine leadership.

b. The question of writing within the classroom was again asked. One of the first areas of assessment was to have faculty who are members in the Engineering Technology department perform assessments of students within the department.

c. Writing across the curriculum is being supported. Students are required to take the writing exam COM3000. It is a graduation requirement for all students.

d. Individual designed assessment instruments. Professor Jerry Cuper is modified and is continued with improved pre-test/post test activities in TIE1083, Technical Graphics

e. Additional individual designed assessment instrument. Professor Ken Cook carries on a program of continuous quality improvement. Feedback from the previous semester is used to improve classroom technique and assessment applicants. Professor Cook has built a large database that gives him a chance to evaluate how students perform under classroom pressures. In TIE4115, Senior Projects, students perform activities such as designing and building a product. They assemble a major document that chronicles the whole project from initial conception to final launch of the product.

f. Written and oral communication was also examined inTIE2063, Manufacturing Processes 1, and TIE2153, Manufacturing Processes 2. TIE4115, Senior Projects have writing and presenting as an integral part of the classes. TIE2063 and TIE2153 have, as part of the course, an assigned paper that is to examine something new and/or innovative within the world of manufacturing. They identify a good topic and then write an abstract about the topic. If it approved by the instructor, the teams can then go out and research their topic. Students must also do a presentation to the rest of the class. They must divide the work and help with all parts of the presentation. The students are evaluated by their peers within the group as well as in the class. They are required to present a group presentation which cannot exceed twenty minutes. They also evaluate themselves. Like the manufacturing processes classes, the teams are

made up of groups of three. Writing and presentations are required. They are evaluated by their peers as well as advisory board members. They are video recorded and evaluated by faculty members of the English department.

The BSCM degree is also headquartered in the department as well. It has been a challenge to identify and recruit new faculty members. Patience has paid off because students can enter the program as beginning students and pursue the BSCM degree. They can also start in the ASCET program and transfer into the BSCM program. Student enrollment has improved by nearly 100% over the previous year.

3. Action Plan for 2008-2009

- All Faculty members will perform pre-test/post-test in their classes
- All faculty members, both fulltime and part-time goals that are written in ABET format
- New faculty members will be assisted in the development of goals
- Copies of How to Write and Use Objectives, Classroom Assessment Techniques: a Handbook for College Teachers, will be available in the Engineering Technology Department.
- Heaviest of the actions activities that are goals and objectives to be written in ABET format.

Prepare to set up an accreditation program for the BSCM degree program. The American College of Construction Education (ACCE) is the agency that will accredit the Construction Management degree program. The target date for the Construction Management accreditation will tentatively be in Spring 2011.

College of Engineering

Department of Mechanical Engineering

Mechanical Engineering Department
Objectives and Outcomes Assessment
Summary 2007-2008

1. Program Educational Objectives, Outcomes and Accreditation Status

The Department of Mechanical Engineering

The following are the current program objectives for the Mechanical Engineering program at Lawrence Technological University:

1. Produce graduates capable of applying fundamental science, math, and engineering principles, in conjunction with modern technology, in an interdisciplinary engineering work environment.
2. Produce graduates who are competent to pursue advanced degrees in engineering.
3. Produce graduates capable of working in global technical locations as well as in the automotive related industries of southeast Michigan.
4. Produce graduates capable of working in teams while utilizing ethical judgment and strong communication and leadership skills.
5. Produce graduates capable of understanding contemporary global engineering issues and recognizing the importance of lifelong learning.
6. Provide equivalent day and evening engineering degree programs for both full-time and part-time or working students.

The following are the program outcomes for the Mechanical Engineering program at Lawrence Technological University:

a) An ability to apply knowledge of math, engineering and science
b) An ability to design and conduct experiments as well as analyze and interpret data.
c) An entry level ability to design a mechanical component and/or system to meet predetermined design requirements.
d) An ability to function on a cross disciplinary team.
e) An ability to identify, formulate, and solve mechanical engineering problems.
f) An understanding of professional and ethical responsibility of mechanical engineers.
g) An ability to produce effective oral and written communications.
h) A broad education necessary to understand the impact of engineering solutions in a global and societal context.
i) A recognition of need and ability to engage in life-long learning.
j) A knowledge of contemporary issues.
k) An ability to use the modern techniques, skills, and tools of mechanical engineering.

2. Assessment Activities and Results

The ME department currently has assessment methods setup to evaluate the above 11 program outcomes (a thu k) for our ABET accreditation. Because these 11 outcomes deal with many of the same issues as the university's undergraduate educational goals, the assessment of the university undergraduate educational goals for the ME department will be done using the department's existing ABET assessment techniques. The attached chart shows the mapping of

the undergraduate educational goals to the ABET outcomes. Using this mapping, the assessment plan matrix for the university goals (see attached) was determined.

It was determined that outcomes a thru k will be assessed (collect data) every year (either fall or spring) and then this data will be analyzed (loop-closing) every two years. This schedule should support the assessment of both ABET and the university educational goals.

For the assessment of graduate programs, initial draft assessment plans were developed for the following graduate programs:

- Master of Automotive Engineering (MAE)
- Master of Science in Automotive Engineering (MSAE)
- Master of Science in Mechanical Engineering (MSME)
- Master of Science in Mechatronic Systems Engineering (MSMSE)
- Master of Engineering in Manufacturing Systems (MEMS)
- Master of Engineering Management (MEM)

The above program plans are drafts and the specific outcomes and objectives will need to be finalized. In particular, the DEMS assessment goals and techniques will need to incorporate the student's dissertation work, making its assessment quite different than those of the master's programs where thesis work is optional and is not considered to be an integral part of assessment.

Each assessment plan contains the program's outcomes and objectives along with the assessment tools, performance criteria and timelines for conducting the assessment. These plans will be initiated in the 2008-2009 academic year according to the timelines given in the individual program's assessment plan.

3. Action Plan for 2008-2009

ABET assessment data will be collected for outcomes a thru k. In addition, the assessment plans for the graduate programs will be finalized and assessment data collection will begin for the graduate programs.

LTU Undergraduate Educational Goals	Administration	ME Dept. (ABET)
Group I – Application of Advanced Knowledge		
1. Graduates will demonstrate knowledge and expertise in applying this knowledge in their fields.	Departments/Programs	Outcome a, c, e
2. Graduates will demonstrate effective use of technology and the ability to apply it in their fields.	Departments/Programs	Outcome k
Group II – Fundamental Cognitive Skills and Abilities		
1. Graduates will be skilled in written and oral communication.	University – Writing Prof./Oral Comm. Programs	Outcome g
2. Graduates will be aware of the diverse basis of our culture and will demonstrate both breadth and depth in the arts and the humanities.	University – Senior Humanities Elective	
3. Graduates will be aware of the foundations and development of American society.	Track courses	
4. Graduate will demonstrate competence in mathematics and in the use of the scientific method and laboratory technique.	Departments/Programs	Outcome a, b
5. Graduates will demonstrate creativity and critical thinking, as well as analytical and problem solving skills consistent with the technological focus of the University.	University – ACT/CAAP	
Group III – Leadership		
1. Graduates will have had experiences that promote a high level of professionalism and integrity, responsible decision making, confidence in approaching professional opportunities, and pride in their abilities.	University – Leadership Program	
2. Graduates will have had experiences that promote the understanding of themselves and others, sensitivity to other cultures in the context of globalization, and interpersonal skills.	University – Leadership Program	
3. Graduates will have had experiences that promote the ability to analyze unfamiliar situations, assess risk, and formulate plans of action.	University – Leadership Program	
4. Graduates will have been made aware of the importance of lifelong learning.	Departments/Programs	Outcome i
5. Graduates will have had experiences that promote a global and societal perspective.	University – Leadership Program/survey	
Group IV – Teamwork		
1. Graduates will have had defined roles in teamwork experiences in which both process and progress are monitored.	University – Teamwork survey	Outcome d
2. Graduates will have had team experiences in which they focus on a common goal, take responsibility for their own contributions as well as for the team's produce, and evaluate one another's contribution to the team.	University – Teamwork survey	Outcome d
3. Graduates will have had team experiences in which they practice making decisions, reaching consensus, and resolving conflicts.	University – Teamwork survey	Outcome d
Group V – Character Education		
1. Graduates will have had opportunities to learn the value of contributing to their community and to society.	University – Leadership Program	Outcome h
2. Graduates will have had opportunities to develop personal values as the	University/Departments/Programs	Outcome f

foundation of integrity and professional ethics.		

Assessment Plan
Department: Mechanical Engineering Program: BSME Last Revision: 12/1/08

Goals (University)	Assessments	Indicators	AdministrationTimeline	Loop-Closing Timeline
I. 1. Graduates will demonstrate knowledge, and expertise in applying this knowledge, in their fields.	FE style questions on final exams in EME3003, EME3034, EME3043 Quiz on design technique in EGE1012, EME3011, EME4212, EME4222 Graded problems based on rubric in EGE2013, EME3013, EME4003, EGE3003, EME3024, EME4013	70% of students receive a score of 60% or higher 70% of students receive a score Of 50%, 70%, 80%, and 87%, respectively, or higher 50% of students receive a score of 70% or higher	Yearly (fall or spring)	Departmental review every two years
I. 2. Graduates will demonstrate effective use of technology and the ability to apply it in their fields.	Evaluation of coursework in EGE1012, EGE1101, EGE1201, EGE1301, EME2012, EME3033	TBD	Yearly (fall or spring)	Departmental review every two years
II. 1. Graduates will be literate and skilled in written and oral communication.	University Writing Proficiency Exam (WPE) University Oral Communications Program Evaluation of oral presentation in EME4412, EME4212, EME4222	All graduates must pass WPE N/A TBD	Continuous N/A Yearly (fall or spring)	None N/A Departmental review every two years

II. 2. Graduates will be aware of the diverse basis of our culture and will demonstrate both breadth and depth in the arts and the humanities.	Senior Humanities Elective	N/A	N/A	N/A
II. 3. Graduates will be aware of the foundations and development of American society.	Track courses in Humanities	N/A	N/A	N/A
II. 4. Graduates will demonstrate competence in mathematics and in the use of the scientific method and laboratory technique.	FE style questions on final exams in EME3003, EME3034, EME3043 Exam questions on laboratory technique in EME4412	70% of students receive a score of 60% or higher 70% of students receive a score of 60% or higher	Yearly (fall or spring) Yearly (fall or spring)	Departmental review every two years
II. 5. Graduates will demonstrate creativity and critical thinking, as well as analytical and problem solving skills consistent with the technological focus of the University.	ACT/CAAP survey	N/A	N/A	N/A
III. 1. Graduates will have had experiences that promote a high level of professionalism and integrity, responsible decision making, confidence in	University Leadership Program	N/A	N/A	N/A

approaching opportunities, and pride in their abilities.				
III. 2. Graduates will have had experiences that promote the understanding of themselves and others, sensitivity to other cultures in the context of globalization, and interpersonal skills.	University Leadership Program	N/A	N/A	N/A
III. 3. Graduates will have had experiences that promote the ability to analyze unfamiliar situations, assess risk, and formulate plans of action.	University Leadership Program	N/A	N/A	N/A
III. 4. Graduates will have been made aware of the importance of lifelong learning.	Alumni Survey Seminars (with exit survey) on contemporary engineering topics in EME4212, EME4222	TBD Required attendance and completion of survey	Every spring Yearly (fall or spring)	Departmental review every two years
III. 5. Graduates will have had experiences that promote a global and societal perspective.	University Leadership Program	N/A	N/A	N/A
IV. 1. Graduates will have had defined roles in teamwork experiences in which both process	University Teamwork Survey Peer evaluations of teamwork	N/A 70% of students achieve a	N/A	N/A Department

and progress are monitored.	projects in EGE1012, EME4412, EME222	score of 68%, 78%, and 89%, respectively, or higher		al review every two years
IV. 2. Graduates will have had team experiences in which they focus on a common goal, take responsibility for their own contributions as well as for the team's product, and evaluate one another's contribution to the team.	University Teamwork Survey Peer evaluations of teamwork projects in EGE1012, EME4412, EME222	N/A 70% of students achieve a score of 68%, 78%, and 89%, respectively, or higher	N/A	N/A Departmental review every two years
IV. 3. Graduates will have had team experiences in which they practice making decisions, reaching consensus, and resolving conflicts.	University Teamwork Survey Peer evaluations of teamwork projects in EGE1012, EME4412, EME222	N/A 70% of students achieve a score of 68%, 78%, and 89%, respectively, or higher	N/A Yearly (fall or spring)	N/A Departmental review every two years
V. 1. Graduates will have had opportunities to learn the value of contributing to their community and to society.	University Leadership Program Seminars (with exit survey) on contemporary engineering topics in EME4212, EME4222	N/A Required attendance and completion of survey	N/A Yearly (fall or spring)	N/A Departmental review every two years
V. 2. Graduates will have had opportunities to develop personal values as the foundation of integrity and professional ethics.	Ethics quiz (T/F) in EGE1012, EME3011 and EME4222 Ethics quiz (multiple choice) in EGE1012 and EME4222	70% of students achieve a score of 70%, 80%, and 90%, respectively, or higher 50% and 70%, respectively, of students will achieve a score of	Yearly (fall or spring) Yearly (fall or spring)	Departmental review every two years

		50% and 70%, respectively, or higher		

College of Management

College of Management
Annual Report Summary
Outcomes Assessment
2007-2008

Contents:

DBA Program
DMIT Program
MBA
MSIS
MSOM
BSIT
Graduate Survey

Submitted:

November 2008

PROGRAM	PROGRAM LEARNING OUTCOMES	ASSESSMENT MEASURES	ASSESSMENT TOOLS	BENCHMARKS/ STATED GOALS	ACTUAL RESULTS	RECOMMENDED CHANGES AND IMPROVEMENTS
DBA	Provide graduates with an advanced knowledge base beyond the MBA that will enable them to be effective leaders. .	Comp Exams	Comp Exam Rubric and pass/fail rates	90% pass rate on comprehensive examinations	94% pass rate on comprehensive examinations	1. Replace Comp Exams with Qualifying Paper. Paper to serve as a bridge from coursework to the dissertation phase of the doctoral program. It will help students identify and focus on potential dissertation topics and specific research questions. It will also demonstrate their ability to successfully research and write a dissertation. A rubric for scoring the qualifying papers has been developed to ensure consistency.
		Dissertations	Dissertation Rubrics and pass/fail rates	100%of cohort 1 students beginning their dissertations	78% of cohort 1 students began their dissertations	
	Provide graduates with the skills necessary to plan, conduct and apply independent research to the practice of management.			Three cohort 1 students complete their dissertations in 2008	Three cohort 1 students completed their dissertations and graduated in 2008	
				100% of cohort 2 students beginning their dissertations	67% of cohort students began their dissertations	
	Provide graduates with the knowledge and skills to improve the practice of management through the integration of theory and	Student Papers/ Presentations at Management sponsored Conferences	Number of accepted student papers/ presentations conducted at Management sponsored Conferences	10 student papers/ presentations accepted	10 papers/ presentations from 8 students 90% positive:	2. The DBA dissertation workshops have been discontinued with the change in the comprehensive examinations to a

	practice. Provide graduates with an understanding and appreciation of global cultural and institutional diversity so that they can be effective leaders in multi-cultural organizations. Provide graduates with insights and capabilities for introspection and self reflection for continuous professional development and life-long learning.	End of Term Evaluations	Confidential student evaluation forms	100 percent positive feedback Students are increasingly exposed to the fundamental requirements for effective Global Leadership; learn techniques for Leading Change in Global Organizations; have increased understanding of the roles and responsibilities of Global Institutions; and develop the knowledge and skills essential to managing Global Technology, Marketing and Financing.	The high quality of instruction and ability to convey complex concepts and principles effectively were widely noted on the end of term course evaluations. The usefulness of text books and value of other course materials were recognized in all courses. The value of guest speakers was highly endorsed by students. Most instructors plan to maintain if not increase the number of guest speakers in the 2008-2009 year.	qualifying paper. Students will receive guidance for their dissertations as part of the review process for the qualifying papers. 3. Professors evaluated and decisions made for continued teaching based in part on end of term evaluations 4. Faculty will continue to introduce additional global content into each course in 2008-2009 consistent with the COM's goal of preparing future leaders for the challenges of the 21st Century and the global economy.

DBA Measurable Program Goals for 2008-2009:

Following is a summary of the measurable goals for the DBA program for 2008-2009:

1. Three DBA students will complete their dissertations in 2009.

2. A pass rate of 90% on the qualifying papers.

3. For cohort 3, 75% of all students who pass their qualifying papers convene a dissertation committee and begin working on their dissertations within 90 days of completing their qualifying papers.

4. Ten student papers submitted, published or presented in 2008-2009.

5. Receive zero negative comments on course evaluations related to course expectations and feedback on assignments.

DMIT OA MATRIX 2007-2008 SUMMARY REPORT

DMIT Mission Program Goals and Strategies	**DMIT Outcomes** *(State if Program Outcome [PO] / Student Learning Outcome [SLO] / Effectiveness Measure [EM])*	**Desired Outcome/Result** *(Cite Measurable Criteria for Success)*	**Means of Assessment** *(Evaluation Tool)*	**Actual Outcome/Result** *(Cite Data Findings)*	**Use of Results** *(Strategies to Improve or Continue Success)*
DMIT Mission: To equip IT leadership with the knowledge of information technologies and leadership competencies to foster innovation in enterprise and industrial processes. **DMIT Goals and Strategies:** Offer working professionals with high levels of managerial and technical expertise in IT: 1) Offer learning experiences focused on problem-solving, leadership and innovation. 2) Enhance learning transformation by applying theory to attain actionable IT management competencies. 2) Cultivate innovation through applied research. 3) Share research results with academic peers via peer reviewed journals and conferences. 4) Be informed of best practices to improve	**Theoretical outcome** – define and teach the concepts and principles in IT Management.[PO] [SLO] **Informational outcomes** – gain knowledge of leading-edge trends in IT management in global business environment.[PO] [SLO] **Skill-sets** – impart leadership, managerial and technical competencies that students should have upon completing the program. [PO] [SLO] **Informed of practice** – knowledge and awareness of best practices found in business and industry in the field of IT Management. [PO] [SLO]	DMIT students are able to write in good technical style. DMIT students are able to complete and present work on individual assignments, team projects and research to peers and sponsors. DMIT students pass coursework with above 3.3 GPA. DMIT students attain candidacy after all coursework is completed	Individual and team assignment papers. Individual and team presentations during program. Presentations during Seminar 6 of MIS7813. DMIT Comprehensive Examinations (2 exams of 10 hours duration)	Assessment report of each course. Individual and team presentations in 12 courses 15 candidates	Maintain emphasis on good writing competencies. Maintain emphasis on communication skills; videotape key presentations for review with students. Maintain and improve support for student preparation for C.E.

quality and efficiency in business and IT processes. 5) Foster collaboration with industry and commercial sectors.					
	Satisfaction -ensure that students and their sponsors are satisfied with DMIT curriculum [EM] Ensure that students are satisfied with pedagogy and didactics [EM]	Students rate the course content as appropriate and relevant. Students rate pedagogy appropriate. Students rate instructors as well-prepared and effective. Sponsors continue to support tuition.	**All coursework**: Mid-term evaluation Term-end evaluation **Major Track coursework** Pre-course Knowledge Assessment. Post-course Knowledge Assessment.	- 80% of students rate the course content as appropriate and relevant - 70% of the students rate the instructor as effective	Continue to improve. Interview sponsors and use feedback to update program.
	Applied research- Develop competencies to perform applied research [SLO] Develop ability to conduct advanced research towards innovative solutions [SLO]	Students complete their doctoral dissertation.	Doctoral Dissertation is evaluated by DisCom. Dissertation is defended in an open forum.	8 completed dissertations	Continue to build a research culture in the DMIT. Build experience in leading research and supervision. Improve completion rate of dissertation research projects.
	Share research - deliverables with peers in academia, commerce and industry [EM]	Students present peer-reviewed papers at conferences Research papers accepted in technical journals Graduate participation in research seminars Student participation and doctoral conferences	Papers are refereed and appear in Conference Proceedings Papers are refereed and appear in journals DMIT peer evaluation Peer review by doctoral students Peer review by doctoral students	18 Conference presentations and articles published in proceedings 2 journal articles 16 Graduates gave research presentations at DMIT Research Seminar, Febr.2008 DMIT students organize and host Connections 2008 Doctoral Conference, May 2008	Increase student research output. Continue tradition of DMIT Research Seminars. Continue participation in doctoral conferences.

	Share research – Faculty deliverables with peers in academia [EM]	Faculty papers accepted for conference presentations Faculty papers accepted for technical journals	Presentations made at conferences Papers appear in technical journals	12 conference presentations and articles published in proceedings	Increase faculty research output.
	Create a tradition of excellence in doctoral education in IT Management [PO]	High level of student satisfaction with DMIT.	Noel-Levitz Survey	90th percentile	Maintain satisfaction level
	Collaborate with industry, and professional bodies [EM]	Participation in research studies and initiatives Support of DMIT Advisory Board and sponsors	Number of completed collaborative projects Bi-Annual meeting	1. 1xAPQC projects 2. Member of The Open Group Architecture Forum and TOGAF9 Work Group 3. Host ABPMP Mini-conference Qualitative feedback about alignment of DMIT curriculum with expectations of practice	Continue collaboration with colleagues in industry and academia Increase participation in APQC studies Increase participation in The Open Group Architecture Forum, Increase participation in ABPMP Update Curriculum and Syllabi

DMIT Measurable Program Goals for 2008-2009:

1. Number of DMIT students expected to complete their dissertations: 9
2. Cohort 4 and 5 students to write their Comprehensive Examinations; a pass rate of 80% on the Comprehensive Examinations to be achieved.
3. Number of students doing dissertation research: 17+.
4. Students expected to present conference papers and journal articles in 2008-2009: 9+.
5. Obtain positive feedback on course evaluations related to learning, course delivery and assignment feedback.

MBA OA MATRIX 2007-2008 SUMMARY REPORT

PROGRAM	PROGRAM LEARNING OUTCOMES	ASSESSMENT MEASURES	ASSESSMENT TOOLS	BENCHMARKS/ STATED GOALS	ACTUAL RESULTS	RECOMMENDED CHANGES AND IMPROVEMENTS
MBA	<u>3 Key Areas:</u> Business Knowledge Application to Business Situations, Problems, and Environment Development of interpersonal and professional skills <u>Supporting Learning Objectives:</u> Practical analytical thinking skills Global thinking skills Strategic thinking skills Balancing management responsibility to	Strategic Mgt Capstone Exam	Strategic Mgt Rubric and pass/fail rates Exam counts from 10 to 25 percent of final course grade in MGT 6063	75% of students to achieve a grade of 85% or better in Capstone Exam	91% of MBA graduating students obtained a grade of 85% or better* *This does not include Dr. Eshbach class because the data submitted showed an average grade of 87%.	1. Met with instructors teaching the course to review the results and to ensure the following areas are emphasized: Financial planning Risk Analysis Strategic Change Strategic Implementation 2. In addition, more focus on contemporary strategy drives such as: Blue Ocean Strategy SVA Balanced Scorecard Strategy Maps SOAR framework 3. Follow-up meeting with faculty scheduled for Feb. 2009 4. MBA Foundational Core Courses and Concentrations being revised in 2008-2009 to reflect findings

	multiple stakeholders Leadership & management skills for profit, non-profit, government, and social sector organizations.					

MSIS OA MATRIX 2007-2008 SUMMARY REPORT

PROGRAM	PROGRAM LEARNING OUTCOMES	ASSESSMENT MEASURES	ASSESSMENT TOOLS	BENCHMARKS/ STATED GOALS	ACTUAL RESULTS	RECOMMENDED CHANGES AND IMPROVEMENTS
MSIS	Students will have an understanding of various areas of information systems needed to successfully support the business processes of the organization.	Core Course Knowledge Pre and Post Tests. The core courses include MGT6153 Project Management; MIS6113 Database Models; MIS6123 Analysis & Design; and MIS6143 Telecommunications.	Performance Scores and % Improvements in Post tests	The post test scores will show an improvement over the scores on the pretest in each of the classes.	The average scores on the post tests were higher in each of the classes in which both the pre and post tests were administered.	The MSIS program is scheduled for review in the Spring, 2009 semester. It is likely that a capstone exam, like used in the MBA program will become the standard for outcome assessment.

MSOM OA MATRIX 2007-2008 SUMMARY REPORT

PROGRAM	PROGRAM LEARNING OUTCOMES	ASSESSMENT MEASURES	ASSESSMENT TOOLS	BENCHMARKS/ STATED GOALS	ACTUAL RESULTS	RECOMMENDED CHANGES AND IMPROVEMENTS
MSOM	To learn the concepts and techniques necessary for successfully managing the operations of industrial and business entities.	Capstone Exam Knowledge Pre and Post Test	A test of 25 questions is administered to the students taking the capstone class. Performance Scores and % Improvements in Post tests are noted.	The desired outcome is for the pre-test scores to be about 30% and the post-test scores to be about 70%, at least.	The result of the scores were as follows: Grp Pre Post W 34% 41% Hi 44% 52% Lo 27% 34% Pre – Pretest Post-Posttest Grp - Group W – Whole Hi – High Lo - Low	The scores are rather low. Even the high group's post-T score is only 52%. The low group's post-T score is lower than the High group's pre-T score. This is rather inconsistent with the knowledge and analytical skills that the students show in my class. Hence, I plan to change this assessment tool. I plan to come up with better questions or change the test format entirely, for the next academic year.

MSOM Measurable Program Goals for 2008-2009:

1. Revise the Pre & Post Knowledge Test to include only conceptual questions and also make the test shorter.

   Reasoning: The questions that are conceptual seem to get better responses from the students than the problem oriented ones. Also, it is more logical to test them in their conceptual knowledge rather than in their analytical and problem solving skills. The former should be at the student's finger tips while the latter is required in an actual job task, where the environment is not one of testing

   Action: Do some preparations during summer so that this task is started early in the fall term.

2. Revise the "qualitative" question so the responses are some what structured while being open ended.

   Reasoning: Some of the students focused on the minor aspects as opposed to the major ones. The objective is to fine tune the questions so that all the respondents focus on the major aspects of the question.

   Action: Schedule this activity as early in the fall term as possible so that there is enough time to prototype test the instrument before using it in the Spring of 2009.

3. As part of the College strategic initiative in assessment, develop some goals and related tools to make the assessment of the MSOM program truly assess the program independent of the ability of the student in learning the course material.

   Reasoning: I feel that the present tools are assessing the program as well as the ability of the students to learn and assimilate the subject matter. To truly assess the program, it should be independent of the ability and effort of the students involved.

   Action: Work with the Associate Dean of the College to coordinate this activity with his overall plan for the assessment activity in the College.

BSIT OA MATRIX 2007-2008 SUMMARY REPORT

PROGRAM	PROGRAM LEARNING OUTCOMES	ASSESSMENT MEASURES	ASSESSMENT TOOLS	BENCHMARKS/ STATED GOALS	ACTUAL RESULTS	RECOMMENDED CHANGES AND IMPROVEMENTS
BSIT	• Develop a broad business and real world perspective • Plan, design and implement IT solutions that enhance business performance • Develop strong analytical and critical thinking skills • Develop interpersonal communication (oral/written) and team skills.	ICCP Exam	Exam results and pass/fail rates	• 80% of students attempting the ACP Certification will score 50% or higher • 50% of students attempting the CCP Certification will score 70% or higher • 80% of students attempting either certification will achieve passing scores	• 15 Students took the exam in the 2007-2008 AY. • 12 (80%) of the 15 students achieved either or both the ACP or CCP certification • 6 Students (40%) earned both the ACP and CCP	• Encourage students to take the exam immediately after all core courses; the time between the end of the capstone course and exam has an impact on the score students earned. Taking the exam shortly after the capstone course should improve student scores. Students will be reminded in the IT Business Strategies (capstone) course by the instructor and again by the Director at or near the end of this course.

						• Make additional changes to the courses to ensure greater coverage of the body of knowledge for IT/Business students by comparing the program/curriculum goals and objectives to the IS2002 Curriculum Guide.

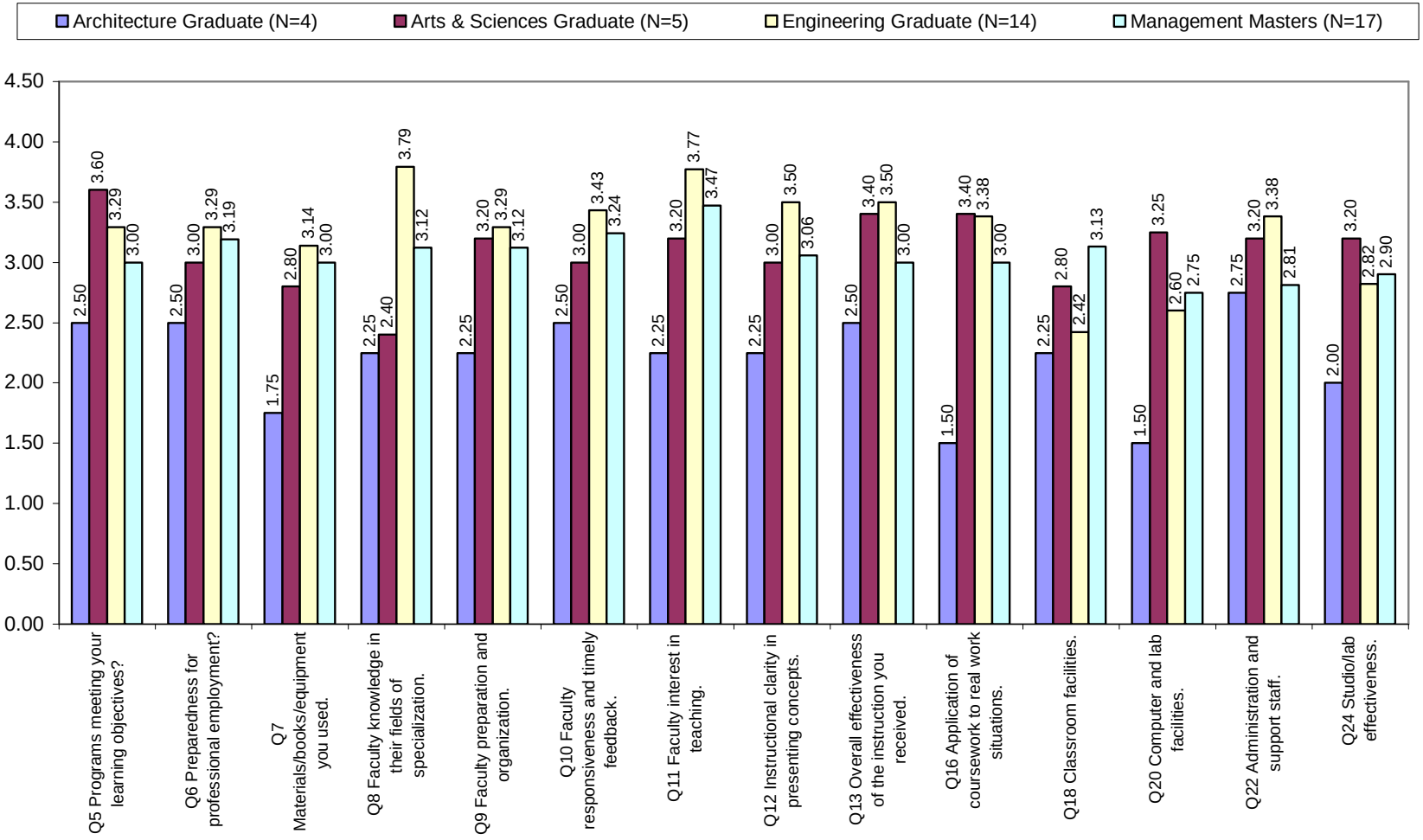
NOTE: Indirect measures are also used for each program and include end-of-term evaluations and the LTU Graduating Survey.

LTU Graduating Survey Results 2007-2008 Mean Scores by College
(Scale 0 – 4)

Notes: No BSIT graduates responded to the Graduating Survey. Q25 is additional comments.

	Architecture Bachelor (N=15)	Architecture Graduate (N=4)	Arts & Sciences Bachelor (N=9)	Arts & Sciences Graduate (N=5)	Engineering Bachelor (N=32)	Engineering Graduate (N=14)	Management Grad Certificate (N=3)	Management Masters (N=17)	Management Doctoral (N=1)
Q5 Programs meeting your learning objectives?	2.93	2.50	2.56	3.60	3.09	3.29	3.33	3.00	4.00
Q6 Preparedness for professional employment?	2.29	2.50	2.56	3.00	3.16	3.29	3.00	3.19	4.00
Q7 Materials/books/equipment you used.	2.57	1.75	2.00	2.80	2.63	3.14	3.33	3.00	4.00
Q8 Faculty knowledge in their fields of specialization.	2.57	2.25	3.22	2.40	3.34	3.79	3.33	3.12	4.00
Q9 Faculty preparation and organization.	2.57	2.25	2.44	3.20	3.06	3.29	3.33	3.12	4.00
Q10 Faculty responsiveness and timely feedback.	2.79	2.50	2.56	3.00	3.03	3.43	3.00	3.24	4.00
Q11 Faculty interest in teaching.	2.93	2.25	2.56	3.20	3.22	3.77	3.33	3.47	4.00
Q12 Instructional clarity in presenting concepts.	2.71	2.25	2.56	3.00	3.03	3.50	2.67	3.06	4.00
Q13 Overall effectiveness of the instruction you received.	2.71	2.50	2.50	3.40	3.06	3.50	3.33	3.00	4.00
Q16 Application of coursework to real work situations.	2.40	1.50	2.00	3.40	2.87	3.38	3.00	3.00	4.00
Q18 Classroom facilities.	1.93	2.25	2.22	2.80	2.10	2.42	3.00	3.13	4.00
Q20 Computer and lab facilities.	2.20	1.50	2.33	3.25	2.03	2.60	3.00	2.75	3.00
Q22 Administration and support staff.	2.20	2.75	2.89	3.20	2.94	3.38	3.33	2.81	4.00
Q24 Studio/lab effectiveness.	2.38	2.00	2.22	3.20	2.60	2.82	3.00	2.90	-
Q26 Preparation in computer skills.	2.93	2.25	2.89	3.25	3.29	3.38	3.00	3.13	4.00
Q27 Preparation in ethical behavior.	3.36	2.75	3.56	3.25	3.34	3.54	3.33	3.00	4.00
Q28 Preparation in appreciation of the Humanities.	3.07	2.00	3.11	3.25	3.06	3.42	3.00	2.79	3.00
Q29 Preparation in interpersonal skills.	3.29	2.25	3.11	3.75	3.28	3.69	3.00	3.25	4.00
Q30 Preparation in mathematics.	2.87	1.75	3.00	3.00	3.48	3.46	3.50	3.00	4.00
Q31 Preparation in oral communication.	2.79	2.33	2.78	3.25	3.31	3.62	3.50	3.31	3.00
Q32 Preparation in problem solving.	3.21	2.50	3.00	3.50	3.56	3.23	3.50	3.19	4.00
Q33 Preparation in teamwork.	3.13	2.00	3.33	3.75	3.41	3.38	3.33	3.44	4.00
Q34 Preparation in written communication.	2.67	2.50	3.44	3.25	3.19	3.62	3.50	3.25	3.00
Q35 Preparation in leadership.	3.07	2.50	3.00	3.25	3.19	3.38	3.33	3.31	4.00
Q37 Give your overall LTU assessment.	2.79	2.50	2.67	3.40	3.03	3.69	3.33	3.19	4.00

Graduating Student Survey 2007-2008
Graduate Results for Questions 5-24



Graduating Student Survey 2007-2008
Graduate Results for Questions 26-37