PURDUE SCHOOL OF ENGINEERING AND TECHNOLOGY 2014-2015 ACADEMIC YEAR ASSESSMENT REPORT

Prepared by the School's Assessment Committee and Karen Alfrey, Chair

October 15, 2016

Introduction

The Purdue School of Engineering and Technology, IUPUI (E&T) continues its tradition of reporting its outcomes assessment activities by department or (where appropriate) by academic program. The assessment activities of most programs in the school are guided by the discipline-specific accreditation requirements of ABET, Inc. (http://abet.org/, formerly the Accreditation Board for Engineering and Technology), which accredits our engineering, technology, and computing programs; of the National Association of Schools of Music (NASM, http://nasm.arts-accredit.org/), through which the department of Music and Arts Technology is accredited; and of the Council for Interior Design Technology (CIDA, http://www.accredit-id.org/), the accrediting body for our Interior Design Technology program. The Organizational Leadership and Supervision (OLS) program, which is not accredited at the program level, uses the campus's Principles of Undergraduate Learning (PULs) as their framework for program assessment. Technical Communications (TCM) offers a certificate program and a recently-established Bachelor's degree in Technical Communication, as well as providing supporting coursework (and assessment data on student learning outcomes in those courses) for many of the programs in the school.

School Assessment Processes

The program outcomes defined by ABET, NASM, and CIDA to describe the knowledge, skills, and habits of mind expected of successful graduates of these programs cover the same broad areas as IUPUI's Principles of Undergraduate Learning, but with more specificity appropriate to the needs of each discipline. (ABET outcomes for engineering programs, for example, include several outcomes that could be considered specific examples of Quantitative Skills, one of the PULs.) Thus, by focusing on attainment of discipline-specific outcomes, programs are assured of meeting the more broadly-defined PULs.

Student Learning Outcomes for each undergraduate program are published in the Bulletin: http://www.iupui.edu/~bulletin/iupui/2014-2016/schools/purdue-engineer-tech/undergraduate/student_learning_outcomes/index.shtml. For engineering programs, ABET defines eleven core outcomes (commonly designated as "a through k" in keeping with ABET terminology):

> Upon completion of this program, students will be able to demonstrate:
> 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 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 engineering problems.
> f. an understanding of professional and ethical responsibility.
> g. an ability to communicate effectively.
> 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 engineering practice.

Some programs may define additional program-specific outcomes appropriate to their discipline. For baccalaureate degree programs in engineering technology, the eleven core "a through k" ABET outcomes are:

Upon completion of this program, students will be able to demonstrate:
a. an ability to select and apply the knowledge, techniques, skills and modern tools of their disciplines to broadly-defined engineering technology activities;
b. an ability to select and apply a knowledge of mathematics, science, engineering and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
c. an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
d. an ability to design systems, components or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
e. an ability to function effectively as a member or leader on a technical team;
f. an ability to identify, analyze and solve broadly-defined engineering technology problems;
g. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
h. an understanding of the need for and an ability to engage in self-directed continuing professional development;
i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
j. a knowledge of the impact of engineering technology solutions in a societal and global context; and
k. a commitment to quality, timeliness, and continuous improvement.

Each undergraduate course taught in the school has identified one or more emphasized PULs, as well as any discipline-specific outcomes emphasized in the course. Based on these defined areas of emphasis, specific courses may be targeted for assessment of a given outcome. The bulk of program assessment is administered and performed at the department level, with the school assessment committee providing a mechanism for sharing resources and best practices, as well as disseminating information and guidance on new campus-level assessment processes. Due to the needs of program accreditation, most assessment data is framed in the language of discipline-specific outcomes; however, due to the significant overlap between these disciplinary outcomes and the broader language of the PULs, programs that successfully meet their disciplinary outcomes simultaneously satisfy the PULs; and mappings between discipline-specific outcomes and the PULs have been established for each program. An example of such a mapping is shown in the table on the next page.

Prompted by the establishment of Principles of Graduate Learning at IUPUI, graduate programs in the School of Engineering and Technology have likewise established student learning outcomes, published in the Bulletin: http://www.iupui.edu/~bulletin/iupui/2012-2014/schools/purdue-enginer-

tech/graduate/student_learning_outcomes/index.shtml Due to the highly specialized, integrative nature of graduate programs, assessment of these outcomes focuses primarily on the thesis (or final project) rather than on individual courses.

ABET/EAC Criteria #3 2011-12 Evaluation Criteria **Engineering programs must demonstrate that their students attain:**	**INDIANA UNIVERSITY-PURDUE UNIVERSITY INDIANAPOLIS PRINCIPLES OF UNDERGRADUATE LEARNING**							
	PUL 1 **Core Communication and Quantitative Skills**			**PUL 2** **Critical Thinking**	**PUL 3** **Integration and Application of Knowledge**	**PUL 4** **Intellectual Depth, Breadth, and Adaptiveness**	**PUL 5** **Understanding Society and Culture**	**PUL 6** **Values and Ethics**
	A	**B**	**C**					
(a) an ability to apply knowledge of mathematics, science, and engineering		X		X	X	X		
(b) an ability to design and conduct experiments, and analyze and interpret data		X		X	X	X		
(c) an ability to design a system, component, or process to meet desired needs with realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability				X	X	X		
(d) an ability to function on multidisciplinary teams	X					X	X	
(e) an ability to identify, formulate, and solve engineering problems		X		X	X	X		
(f) and understanding of professional and ethical responsibility				X	X	X	X	X
(g) an ability to communicate effectively	X						X	
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context					X	X	X	X
(i) a recognition of the need for, and an ability to engage in life-long learning			X	X			X	X
(j) a knowledge of contemporary issues				X		X	X	X
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice			X		X	X		

School Assessment Milestones

In July 2016, all programs accredited by the Engineering (EAC) and Computing (CAC) commissions of ABET submitted self-studies in preparation for their re-accreditation visit in September 2016. These programs include the Biomedical, Computer, Electrical, Energy, Mechanical, and Motorsports Engineering; as well as Computer Information Technology and Computer Graphics Technology.

The Music and Arts Technology program is currently finalizing their self-study for their next National Association of Schools of Music (NASM) accreditation visit. The document will be submitted in January in preparation for a spring 2017 accreditation visit. Their data collection process and summary of assessment results is discussed in more detail below in the MAT section.

In 2015 the Engineering and Technology Student Council created a new appointed student position, the Coordinator of Academic Success Initiatives, to develop and implement interventions designed to improve student learning outcomes and decrease DFW rates, particularly in freshman and sophomore STEM classes. The Coordinator piloted a Peer-Led Team Learning initiative the sophomore-level BME 22200 Biomeasurements class in the spring semester; the results are described in more detail in the BME section below. In the Fall 2016 semester this initiative is being expanded into other sophomore classes including BME 24100 Intro Biomechanics and ME 20000 Thermodynamics.

The E&T 2015-2016 Assessment Committee

This year the E&T Assessment Committee was chaired by Karen Alfrey, Director of the Undergraduate Program in Biomedical Engineering. The members of the 2015-2016 committee were the following:

Karen Alfrey, Biomedical Engineering
Mark Atkins, Ivy Tech
Mary Baechle, Technical Communications
Dan Baldwin, Computer Graphics Technology
J. Bradon Barnes, Ivy Tech
Andrew Borme, Motorsports Engineering
Elaine Cooney, Engineering Technology
Robin Cox, Music and Arts Technology
Eugenia Fernandez, Computer Information and Graphics Technology
Elizabeth Freije, Electrical and Computer Engineering Technology
Maymanat Jafari, E&T Librarian
Michael Hall, Ivy Tech
Alan Jones, Mechanical Engineering
Michele Luzetski, New Student Academic Advising Center
Emily McLaughlin, Interior Design Technology
David Russomanno, Dean
Seemein Shayesteh, Electrical and Computer Engineering
Elizabeth Wager, Organizational Leadership and Supervision
Jennifer Williams, Career Services
Wanda Worley, Associate Dean for Undergraduate Programs
Paul Yearling, Mechanical Engineering Technology

Departmental and Program Annual Reports for 2015-2016

The 2014-2015 departmental and program assessment reports included in this school report represent the collected works of the following:

- Biomedical Engineering (BME)
- Music and Arts Technology (MAT)
- Technology Leadership and Communication (OLS/TCM)

The table below outlines reporting for the school over the last three years. Previous years' reports are available at http://www.planning.iupui.edu/43.html under "School Assessment Reports".

Programs		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
BME		x	x	x	x	x	x
EE/CE			x		x		
ME/EEN		x			x	x	
MSTE			x		x		
CIT					x	x	
CGT		x			x	x	
IDT		x	x	x	x		
TCM				x			x
OLS			x	x			x
ECET		x	x	x	x		
MET			x	x	x		
HETM				x	x		
CEMT		x	x	x	x		
MAT		x					x
NSAAC						x	

DEPARTMENT OF BIOMEDICAL ENGINEERING 2015-16 ASSESSMENT REPORT NARRATIVE
Written August, 2016

The undergraduate Biomedical Engineering program is on-track for its next ABET accreditation visit in Fall 2016. Data collected during the 2014-15 academic year was analyzed during summer 2015, and our triannual student satisfaction survey was administered during spring 2016. All assessment results, along with general information about the department and program, were summarized in a self-study document submitted to ABET in June 2016.

Table 1 shows the plan for which ABET outcomes are targeted for assessment in which courses; for each course, one or more Performance Indicators are defined for each assessed outcome (e.g. "Students will successfully complete a laboratory assignment with a pre-lab component, data collection component, and analysis component" as an indicator of Outcome B, "Students will demonstrate an ability to design and conduct experiments, and analyze and interpret data," in BME 241) along with a Target for Performance (e.g. "70% of students will earn grades of 70% or higher in the assessed lab assignment"). Any outcome for which we fail to hit our Target for Performance on more than one of the associated Performance Indicators becomes a possible area for further investigation and improvement.

	ABET Outcomes										
Course	a	b	c	d	e	f	g	h	i	j	k	Course title
ENGR 195						X			X			Engr Seminar
ENGR 196								X				Engr Prob Solving
BME 222				X			X		X		X	Biomeasurements
BME 241	X	X			X							Intro Biomechanics
BME 331			X		X							Biosignals/Systems
BME 334							X				X	Biomed Computing
BME 381	X											Implant Materials
BME 383			X									Probs in Implant Mat
BME 322		X										Prob/Stat for BME
BME 352						X				X		Tissue Behav/Prop
BME 354				X								Probs in Tissue Behav
BME 411							X					Quantitative Physiology
BME 442					X							Biofluid Mechanics
BME 461	X											Transport Proc in BME
BME 491/492		X	X	X		X		X		X	X	BME Senior Design I+II
BME 402									X			BME Seminar
TCM 360							X	X				Comm in Engr Practice

Table 1: Courses targeted for ABET outcomes assessment.

Major Findings from Data Collection
Data collected during Fall 2014 was discussed in last year's annual report. Several important findings emerged from the analysis of data collected during Spring 2015:

- ABET Outcome B, "Students will demonstrate an ability to design and conduct experiments, as well as to analyze and interpret data," is assessed in part by an exam question in BME 32200 Probability and Applications in BME asking students to determine the minimum sample size necessary to guarantee a given statistical power.

Only 50% of students in the class met or exceeded our target for performance on this question, well below our goal that at least 70% of students would meet that performance expectation. In future iterations of this course, students will be given additional opportunities to practice calculating the power of a test to ensure they understand this important component of experimental design.

- To help students develop the skills they will need to meet ABET Outcome I, "Students will demonstrate a recognition of the need for, and an ability to engage in life-long learning," the BME 22200 Biomeasurements class includes a laboratory in which students learn the LabVIEW software tool independently using tutorials, exercises, and a mini-project. Their success in learning LABVIEW is assessed with a LabVIEW design question on the final exam. 78.3% of students who successfully completed the course (n=23) scored at least 70% on this question, meeting our expectations for this outcome. However, when students who did not successfully complete the course are also factored in, only 55.9% of all students met our target score for this item. This suggests that the ability to learn independently is a strong predictor of success in our courses, and that working to foster this skill may help our weaker students persist and succeed in our courses (particularly at the sophomore level) and in the BME program. This year we are experimenting with *in-class peer mentoring* (described below) to help students develop their independent problem-solving abilities.
- Results of our Student Satisfaction Survey (Table 2) show that students are generally satisfied with most aspects of the BME program, and we have maintained many of the important gains we made between 2010 and 2013 (such as satisfaction with career advising, opportunities to get to know and to work with BME faculty members, and the availability of help outside the classroom). This suggests that the processes we put in place to address early concerns – such as expanding the number of faculty members serving as advisors, recruiting a new faculty member to serve as Director of Undergraduate Research in BME to connect students to research opportunities, and better coordinating TA office hours so that help is available at many times throughout the week – are continuing to address student needs. One item that unexpectedly fell was student satisfaction with the quality of instruction in lecture courses, which fell from 4.2 in 2013 to 3.4 this year. However, it is worth noting that the average score among senior students was 4.0; among junior students was 3.6; and among sophomore students was 2.7. Among the sophomores, the score appears to be the result of a few very disgruntled students pulling the average down. Furthermore, conversations with senior students suggest that they tend to have a much higher opinion of the quality of instruction particularly in very challenging classes in the semester or two after they have completed the class (and realize that they learned, retained, and know how to apply the material in their subsequent courses) than when they are still facing the stress of exams and project deadlines for the course. Nevertheless, we will keep an eye on teaching evaluations to see if consistent and constructive criticisms emerge.

New Initiatives to Improve Learning

This year, to give students more opportunities to practice problem-solving and to support their skill development with immediate feedback, we have incorporated *Peer Mentoring* into three courses. In BME 33100 Biosignals and Systems and BME 32200 Probability and Applications in BME, the class was divided into small groups (3-4 students) with each group having a mix of stronger and weaker students; these courses incorporate daily in-class problem-solving activities for which students now have a defined small group of classmates to bounce ideas off of. In the fall semester, after implementing this change, BME 33100 had a 0% DFW rate for the first time. In the spring, exam grades in BME

32200 were 5-10 percentage points higher compared to the last several years. In BME 22200 Biomeasurements in the spring, four Junior students (two in each lab section) oversaw problem-solving activities related to the week's course material for the first hour of each lab section and provided immediate help and feedback. Although the full impact of this intervention is difficult to assess directly, the BME 22200 instructor did report that he saw a significant increase in student participation – particularly in the asking of relevant and insightful questions – during lecture. This peer led team learning model will be extended into the other sophomore BME class in the fall.

	2010	2013	2016
I am satisfied with the quality of advising in the BME Department.	4.1	3.9	4.1
I am satisfied with access to the advisor in the BME Department.	4.3	4.0	4.1
I am satisfied with advising on job placement and graduate programs.	3.2	3.5	3.5
I am satisfied with the current opportunities to get to know other students in the BME Department.	3.7	3.8	4.0
I am satisfied with the current opportunities to get to know the faculty members in the BME Department.	3.4	3.7	3.7
I am satisfied with the level of opportunity to do research with the faculty members in the BME Department.	3.1	3.5	3.6
I am satisfied with the hours that the BME office is open.	4.0	4.0	4.1
I am satisfied with the frequency of scheduling of BME courses.	2.9	3.6	3.4
I am satisfied with the way that BME courses are scheduled (time, day, length of classes.)	3.4	3.7	3.6
I am satisfied with the quality of instruction in BME **lecture** courses.	3.8	4.2	3.4
I am satisfied with the quality of instruction in BME **laboratory** courses.	3.3	3.9	3.9
I am satisfied with the amount of available help outside the classroom and laboratory.	2.9	3.9	3.8
I am satisfied with the quality of BME laboratory experiences.	3.5	3.8	3.8
The BME classes and laboratories are conducive to learning.	3.8	4.0	3.9
I am satisfied with the quality of the textbooks in BME courses.	2.8	3.3	3.3
I am satisfied with the computers and software in the BME course laboratories.	3.8	3.9	3.7
I am satisfied with the laboratory equipment (exclusive of computers and software) in BME course laboratories.	3.8	3.9	3.9
I am satisfied with the amount of student access to the BME course laboratories.	3.8	4.1	4.1
Scale: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly Agree			

Table 2: BME Student Satisfaction Survey results 2010-2016.

DEPARTMENT OF MUSIC and ARTS TECHNOLOGY
2015-16 ASSESSMENT NARRATIVE
Written June, 2016

The Bachelor's of Science in Music Technology program (BSMT) is on track for its next National Association of Schools of Music (NASM) accreditation visit in February 2017. The Bachelor's of Science in Music Technology program (BSMT) is designed to instill students with technical, theoretical, and creative skills required to pursue professional careers in the growing field of music technology. Students enroll in both traditional music studies, (music theory, aural skills, keyboard studies, and applied instrument lessons) as well as our wide-ranging and innovative technology courses of recording and production, creative music technology, digital signal processing for music, and interface and instrument design. The degree culminates with presentation of a capstone project, combining a student's creative, technical, theoretical, and historical knowledge.

The BSMT program is currently in its seventh year of implementation. Although the Department of Music and Arts Technology has not until now had to opportunity to participle in the School of Engineering and Technology assessment process, there have been substantial program developments aimed toward improving the quality of student learning and ensuring the pedagogical effectiveness and relevance of the BSMT curriculum. These changes were made in response to critical feedback on student experience within the BSMT program and recent additional NASM accreditation standards specific to music technology.

Program assessment in response to critical student feedback

During the end of the 2013-2014 academic year a formal interactive information session was held with the Department chair and BSMT students. As a result important information regarding student's experience in the program was obtained. Additional student feedback has been gathered from student engagement with the Department Chair, the BSMT program coordinator and other BSMT faculty. The majority of feedback received related to the role of audio recording production in the BSMT program. A significant number of our students expressed a desire for more opportunities for more recording-based activities during their plan of study and for access to professional grade recording faculties. During the 2015-2016 academic year, MAT has hired a new Assistant Professor specializing in recording arts to teach several recording courses and mentor recording-based student projects as part of the curriculum. In Spring of 2016, MAT opened the Critical Listening Environment for Audio Research (CLEAR) Laboratory, a state of the art recording facility for teaching and research. Several courses in the BSMT curriculum have been redesigned to incorporate student learning activities using this facility.

Students also wanted options for engaging in internships and other resources geared toward acquiring professional experience. The BSMT program is now working with School of Engineering and Technology Student/Career Services to develop formal internships and to connect students with job opportunities. We will are also working with the IAB to design and support internships for BSMT students. During the 2015-2016

academic year, the Department was also made significant efforts to improve student advising that include improving integration with School advising resources.

BSMT curriculum restructuring in response to recent additions to NASM accreditation standards specific to music technology.

A large-scale restructure of the BSMT curriculum went into effect at the beginning of the 2015-2016 academic year. The curriculum changes were primarily related to expanding the depth and scope of the Music Technology course content in the plan of study. Under the older plan of study are large portion of the Music Technology course content was combined in the same course with traditional musical topics such theory and aural skills. The intended outcome was to offer a comprehensive musicianship course sequence that included Music Technology. After review within the MAT Undergraduate Curriculum Committee, it was decided to restructure the Music Technology content of the BSMT to allow for more focus and specialization. The current plan of study distributes the Music Technology course content over a eight course technology sequence. Additionally a new Applied Technology course (Applied Technology A200) was created to better serve the musical performance interests of students whose primary focus is Music Technology

The course restructure brings the BSMT program into greater alignment with recent additions to NASM accreditation standards specific to music technology (listed below)

From NASM handbook (pp. 209-210)

a. Essential Competencies

(1) Basic understanding of the scope, integrative nature, and various functions of music technology as a field, including acquaintance with various applications of music technology in music, technological development, research, pedagogy, and in other fields.

(2) Knowledge of and ability to use various terminologies and procedures in music technology, music, and technology, and their combinations as employed in and associated with the work of music technology. This includes, but is not limited to, their respective vocabularies of practice, ways work is conceptualized, developed, synthesized, and finalized, and phases of production, presentation, and/or distribution.

(3) Ability to solve music technology problems, including (a) problem identification, information gathering, solution development, and testing, and (b) knowledge and skill to produce case-specific decisions about what is useful, usable, effective, and desirable during the course of music technology project development and production.

(4) Ability to describe and respond to the needs or expectations of users, audiences, and/or contexts associated with doing professional work in two or more areas of music technology.

(5) Advanced capabilities in specific areas of musicianship consistent with the music technology areas that constitute the degree program's focus. Aural skills are essential. Abilities to apply advanced knowledge of the properties of musical structures and processes to solving music technology problems are essential.

(6) Fundamental knowledge of current technologies and technological principles widely applicable to

music technology, including but not limited to those associated with recording, manipulating, and presenting music and sound, signal flow and processing, music communication protocols, synthesis and interface technologies, sound synthesis, and interactive and generative media.

(7) The ability to use industry standard technologies at a professional level to achieve goals and objectives associated with specific areas of music technology, These goals may be in terms such as mastery of production techniques, artistic expression, support for work in other fields, relationships with other technologies and media, and so forth.

(8) Ability to apply knowledge of fundamental science, engineering, and math concepts and other aspects of the science of sounds and the electrical manipulations of sounds in music technology situations.

(9) Basic understanding of connections among music, technology, music technology, and culture, including the evolution of music technology, the impact of technology on music and culture, technological influences on multiple musical styles, including contemporary styles, and their cultural contexts, and information and means for projecting future possibilities in music technology; and basic understanding of these connections with regard to current and emerging Internet- and network-based programs, services, and environments related to the creation, sharing, and distribution of music.

(10) Knowledge of the basic principles, laws, regulations, and ethical considerations and practices associated with music technology and intellectual property as it is both acquired and created by individuals working in the music technology program.

(11) Comprehensive capabilities to use and integrate the above competencies in at least one area of music technology to produce professional-level work in at least one area, and basic level work in a second area.

The following table illustrates the new Music Technology course sequence alignment with NASM essential competencies specific to Music Technology programs.

	NASM Music Technology competencies										
Course	1	2	3	4	5	6	7	8	9	10	11	Course title
A132	x	x					x			x		Mus Tech Lab 1
A142		x				x	x					Mus Tech Lab 2
A232		x			x	x	x					Mus Tech Lab 3
A242		x			x	x	x					Mus Tech Lab 4
N310	x	x	x			x	x					Music Technology I
N320		x	x			x	x					Music Technology II
N410		x	x	x		x	x	x	x	x	x	Music Technology III
N450		x	x	x		x	x	x	x		x	BSMT Capstone
A200		x			x		x					Applied Music Technology

As the BSMT degree program enters its 8th year it faces significant opportunities for growth and adaptation as the MAT faculty seek to uniquely define the program and ensure its continued success and achievement. This work is critical for the department of MAT as the BSMT has the potential to be a highly distinctive and exemplary program in the field, lending MAT increased visibility, longevity (through successful alumni), and reputation.

DEPARTMENT OF TECHNOLOGY LEADERSHIP AND COMMUNICATION
2015-16 ASSESSMENT REPORT

Department Overview and Updates

The Department of Technology Leadership and Communication (TLC) was formed on July 1, 2012, as a result of a realignment of Technology programs in the School of Engineering and Technology (E&T). TLC houses undergraduate programs in both Organizational Leadership and Supervision (OLS) and Technical Communication (TCM). Additionally, Master of Science in Technology students may select a focus area in Organizational Leadership or pursue the new graduate certificate. In total, TLC offers and supports coursework for the following 2 bachelor's degrees, 5 certificate programs, graduate programs, and minor:

- Bachelor of Science in Organizational Leadership and Supervision
- Bachelor of Science in Technical Communication
- Master of Science in Technology (OLS Focus Area/TCM Course Offerings)
- Certificate in Human Resource Management (UGRD)
- Certificate in International Leadership (UGRD)
- Certificate in Leadership Studies (UGRD)
- Certificate in Technical Communication (UGRD)
- Certificate in Human Resource Development (GRAD)
- Honors Minor in Leadership (UGRD)

During the first three years as a department, TLC focused a majority of its resources on new course development and activities to support newly approved programs (B.S. in TCM and HRD Graduate Certificate). Changes in campus-level leadership during the summer of 2015 resulted in a shift in departmental roles, responsibilities, and priorities. In August 2015, Charles Feldhaus assumed a new role as TLC Interim Department Chair. His first challenge was to address overlapping areas of responsibility and develop clear priorities for the 2015-16 year of transition. Administrative, advising, and curricular support for the nine academic programs were aligned under three departmental program director roles and shifts in other responsibilities provided the necessary resources to achieve a list of specific 2015-16 goals.

TLC Department Priorities 2015-16

Under new leadership, TLC focused a large majority of department resources as well as faculty and staff activities on achieving success in the following priority areas (established in August 2015 at the first of 5 department meetings):

- **Operational Excellence**
  - Understanding roles, responsibilities, and resources within TLC
  - Updating and maintaining forms, brochures, posters, and our website
  - Enhancing and improving communication among and between full-time faculty, staff, adjunct talent, on- and off-campus partners, and our students

- **Student Recruitment**
  - Undergraduate certificates (Leadership Studies, HR Management, Int'l. Leadership; Tech. Communication)
  - Undergraduate degrees (OLS; TCM)
  - Graduate certificate (HR Development)
  - Graduate degree (TLC-oriented concentrations within M.S. Technology)

- **Canvas Migration and Adjunct Faculty Support**
  - Ensuring that each course has a full-time faculty coordinator
  - Leveraging CTL resources for assistance in Canvas migration
  - Working with adjunct talent for greater coordination, consistency, and quality

- **Research and Scholarly Output**
  - Refreshing and updating our TLC Collective Capabilities framework
  - Involving more of our students in joint research projects with faculty
  - Supporting our colleagues as they disseminate, seek funding, and apply for promotions

- **Strategic Projects**
  - Improving the data collection and analysis about TLC students
  - Launching pilot Competency-Based Education for two OLS Certificates (Leadership Studies and HR Management)
  - Developing or revising our assessment plans for each TLC program

Data-driven Assessment Decisions

A 5-year enrollment analysis indicated that a drop in TLC credit hour generation, attributed to IUPUI's establishment of a common General Education Core (2012-13), was resolved by course development that resulted in approval of four TLC courses to the IUPUI General Education Core Curriculum (TCM 18000, OLS 25200, OLS 26300, and OLS 27400). While the programs delivering these general education electives are not accredited, OLS and TCM offer a combined 20 individual service courses (15 TCM and 5 OLS) in support of academic programs accredited by ABET, CIDA, and other discipline-specific accrediting agencies. In AY 2015-16, service courses contributed to a 6.1% increase (headcount) in students enrolling in TCM. Enrollment data indicated the greatest increase was in TCM 36000 (required for bachelor's degree students in engineering programs) with similarly increasing enrollment in each of the new services courses developed specifically for the Department of Engineering Technology to provide technical communication across the curriculum for students pursuing ECET/MET degrees. Strategic planning around, and assessment of, TCM services courses naturally elevated to the priority list for 2015-16 departmental activities.

OLS services courses experienced modest increases in enrollment based on comparison with data collected for AY 2013-14 and 2014-15. Recognizing that the last formal assessment plan for OLS was created in 2005, no data had been regularly collected since 2012, and TCM had not developed a program-level plan for assessment of student learning, the task of developing a

comprehensive departmental assessment plan became one of the highest priorities for the academic year.

Assessment and Related Initiatives

During the past year, TLC undergraduate programs and faculty have contributed to ongoing activities to contribute to development of parallel assessment plans for B.S. degrees in both OLS and TCM, creation of course rotations and enrollment management for all service course offerings, and many other initiatives to support continuous assessment and evaluation of course and program outcomes. The following section summarizes major initiatives and accomplishments in areas of assessment and related activities over the past year:

1. Defined roles and responsibilities for collection and reporting of assessment data: course coordinators, programs directors, department representatives to the E & T Assessment Committee. TLC reassigned course coordinator roles to create more balanced workload among full-time faculty and collaborated to develop the following resources to assist course coordinators in data collection:

- Updated OLS and TCM Course Coordinator Information

- Developed ENT Service Course Rotation/Revised Again May 2016 (Specific to TCM 21800, 21900, 22200, 35800, 35900, 41500 (and TCM 41600/new course request in the fall 2016 term).

- Revise forms and process for assessment and evaluation of learning outcomes for TCM 36000. Completed evaluation and assessment of student learning outcomes for 90+ engineering students enrolled in TCM 36000 during the fall 2015 term (reported data and analysis to internal engineering faculty preparing self-studies for upcoming ABET visit.

- Developed a comprehensive TLC service course data collection rotation to ensure regular collection, evaluation, archiving, and reporting of student learning outcomes data (even during years where no E & T programs are scheduled for accreditation visits). Data will be evaluated and archived each fall/spring to contribute to TLC's effort to provide excellence in teaching and learning. **See table below.**

TLC UGRD Service Course Data Collection Rotation

Service Course Subject & Catalog #	Assessed IUPUI General Ed Core	Assessed PUL(s) (SIS Data)	Assessed for BS Core (OLS/TCM)	ET Program(s) (Accreditation by ABET/CIDA)	Data Collection Term	iGPS Planned Completion Term(s) for TECH/ENGR (updated for fall 2016 Degree Maps)
OLS 25200	Yes	Yes	Yes	CIT/CGT/INTR	Fall/Even	INTR: SP/YR3
OLS 26300	Yes	Yes	Yes	CIT	Fall/Even	
OLS 27400	Yes	Yes	Yes	CEMT	Spring/Odd	CGT: SP/YR4
OLS 32700		Yes	Yes	ENGR/Varies	Fall/Even	
OLS 37100		Yes	Yes	CIT/INTR	Fall/Odd	INTR: FA/YR4
TCM 18000	Yes	Yes	Yes	Campus/NCA	Fall/Even	
TCM 21800		Yes		MET/EET/ECET	Fall/Even	EET: FA/YR2

TCM 21900		Yes		EET/ECET	Spring/Odd	EET: SP/YR2
TCM 22000		Yes		CEMT/EET TSAP HETM	Fall/Even* Spring/Odd	CEMT: SP/YR 1; EET/TSAP: FA/YR3*; HETM: FA/YR3
TCM 22200		Yes		EET/ECET	Fall/Even	EET: FA/YR3
TCM 32000		Yes	Yes	CIT/OLS/CSCI/ HETM	Fall/Even	CIT: TCM Elective FA/YR 3; HETM: SP/YR3
TCM 34000		Yes	Yes	CEMT	Fall/Even	CEMT: FA/YR 2
TCM 35800		Yes		MET	Spring/Odd	MET: FA/YR3
TCM 35900		Yes		MET	Spring/Odd Fall/Even*	MET: SP/YR3; MET/TSAP: FA/YR4*
TCM 36000		Yes		All ENGR1	Fall/Even Spring/Odd	BME: SP/YR3; BSCE: SP/YR3; BSEE: FA/YR3; ENERGY ENGR: FA/YR4; BSME: FA/YR4; BSME/TSAP: FA/YR4*; MOTOR SPTS: SP/YR3
TCM 38000		Yes		HETM	Spring/Odd	HETM: SP/YR4
TCM 41500 Intermediate		Yes		EET/ECET/MET	Fall/Even	EET/ECET: FA/YR4; MET/ALL: SP/YR4
TCM 41600 Advanced		Yes		EET/ECET	Spring/Odd	EET/ECET: SP/YR4

Notes in preparation of TLC Service Course Assessment Data Collection Rotation: EET/ECET students complete 5.0 units of 1.0 unit TCM courses in years 2/3/4 per the 2016 iGPS degree maps; EET/TSAP students take TCM 22000 in FA/YR3* MET students complete 4.0 units of 1.0 unit TCM courses in years 2/3/4 per the iGPS degree map; MET-TSAP takes TCM 35900 in FA/YR4* and TCM 41500 in SP/YR4*

**Indicates TSAP 2-year Articulation (YR3* = year 1 at IUPUI/YR4* = year 2 at IUPUI*

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2. Service course assignments and activities to support learning were evaluated to ensure alignment with expected student learning outcomes. A single learning artifact was identified or revised, where needed, to ensure consistent measurement of student learning across service courses taught by multiple faculty (including adjunct and full-time instructors). Where resources permit, all TLC course coordinators will teach a minimum of 1 section of each service course to make necessary updates to master learning management course sites and provide stronger support and training for adjunct instructors.

3. Over the summer 2015 – fall 2015 semester, new master Canvas LMS sites were developed for all OLS and TCM course offerings. Moving forward, each course coordinator is responsible for maintaining master sites, updating as needed, and providing regular communication, training, and teaching support for each instructor/section. Effective August 2015, all TLC undergraduate courses were delivered in the new Canvas LMS.

4. In the fall 2015 term, OLS launched a pilot to determine viability of delivering competency-based education (CBE) in parallel to its portfolio of regular, hybrid, and fully-online offerings. Faculty participated in campus-level discussions and training related to the pilot. Although resources only permitted a small pilot (course level, not certificate level); department faculty working on the CBE pilot learned a great deal from the few students who participated. First experiences will guide future course designs for CBE-type offerings:

- Measurable competencies, when mapped in parallel to specific student learning outcomes provide the context for valid and robust evaluation of learning.
- Permitting students to learn at a completely variable pace places great time constraints on instructors seeking to ensure substantive and regular engagement with students.
- High-quality, reliable learning technology is essential to effective online course delivery, particularly where participation in regular, synchronous discussions is not a mandatory component of the course.
- Expectations for demonstrating student learning (competencies) must be transparent and clearly understood.
- Student self-selection for participation in competency-based education-type courses is not a good indicator of student success. Recent success in college-level coursework is a stronger indicator of student performance in CBE.
- OLS is not fully capable of delivering a competency-based certificate; however, several courses meet standards for assessment of student learning using a CBE model. We will offer one section each of OLS 37500 Training Methods, OLS 36800 Personnel Laws, and OLS 38300 Human Resources management in a CBE format during 2016-17 and HR faculty will continue work towards offering the OLS Human Resource Management Certificate with a CBE option by fall 2017.

5. OLS is leading campus programs in the area of prior learning assessment at IUPUI. IUFC approved fee structure related to awarding special credit through several assessment processes in the spring of 2015. Faculty from all seven IU campuses, including several administrative faculty from E & T, participated in a taskforce charged with developing a framework, policies, and processes related to prior learning assessment, awarding military credit (ACE recommendations), and credit-by-exam (including CLEP/Departmental Exams/Other). In parallel with prior learning assessment efforts at the enterprise level, IUPUI's new Degree Completion Office (DCO) established a 50% faculty position on January 1, 2016 to serve as Prior Learning Assessment Coordinator at the campus level. OLS serves on a the new IUPUI PLA Steering Committee created mid-spring 2016 and is currently pilot-testing a single section of TCM 43500 Portfolio Preparation to be modified and used by all 7 campuses to assist adult students in developing prior learning e-Portfolios (using Taskstream) for the purpose of evaluation and assessment of prior learning. Although OLS has supported prior learning assessment for adult professionals and veterans for many years, recent legislation (federal and state) has created opportunities to share lessons learned and disseminate in areas of scholarship of teaching and learning as it relates to CBE, PLA, and the use of e-portfolios in the assessment of student learning outcomes.

6. OLS developed a program-level assessment plan for students completing the B.S. degree program. Assessment of program learning outcomes is evaluated using multiple measures across

the 2-part senior capstone series: OLS 48700 and OLS 49000. In OLS 48700 students complete a leadership development e-Portfolio and the OLS Comprehensive Exam. OLS 49000, taken in the last semester, includes a senior research project/presentation and completion of a senior survey.

- Pre-/post-exam includes a random selection of 100 questions, pulled from 10 Canvas questions pools, mapped to course-level and program-level student learning outcomes across the B.S. curriculum (all OLS "Core" courses must be completed by all students enrolled in the bachelor's degree, including internal/external transfer students, regardless of previous educational background). Students complete the pre-assessment in week 2 of OLS 10000 and complete the post-assessment (referred to as the OLS Comprehensive Exam) at the end of OLS 48700. [Comprehensive Exam questions pull from OLS 10000, OLS 25200, OLS 26300, OLS 27400, OLS 32700, 37100, OLS 38300, OLS 38500, OLS 39000, and OLS 48700.]

- Leadership Development Portfolios are first created in OLS 10000. Students select artifacts, populate portfolios, and participate in self-assessment activities as they move through the core curriculum. Seniors complete the project in OLS 48700 by adding a personal leadership philosophy and plan for life-long learning.

- Graduating seniors who voluntarily piloted the first version of the OLS Comprehensive Exam in May 2015 had a mean score of 36.2% (n=8). Students completing the exam in May 2016 scored 61.0% (standard deviation 6.28%) and a high score of 81%. Clearly, there is still need for improving student learning across the curriculum, but course-level effort to better align outcomes with expected program learning outcomes appears to be improving comprehensive exam scores. However, we also recognize that students are now aware of the exam and may be paying greater attention to expected outcomes for each of their OLS courses.

7. TLC undergraduate programs are now preparing to undergo formal program review during AY 2016-17. In preparation for conducting a mission-centric self-study, TLC collaborated with IRDS to develop four Qualtrics Surveys designed to support program review efforts, but also to become regular components of program-level assessment and continuous improvement efforts that engage all stakeholders. The first two surveys, linked below, were delivered to students enrolled in OLS 10000 and 48700 during the spring 2016 semester. An employer survey and alumni survey are currently under final revision and will be distributed in June 2016. The plan will be to deliver the Freshman Survey to all OLS 10000 students (FYS/TRU admits). Students will complete the Senior Survey during their final semester as part of OLS 49000.

- Freshman Survey - https://iu.co1.qualtrics.com/SE/?SID=SV_7OgBuX0uM8Dscvz

- Senior Survey - https://iu.co1.qualtrics.com/SE/?SID=SV_0B1dCRiJ5Gk0eqx

8. The last meeting of the TLC Industrial Advisor Board was in 2014. Due to efforts to create and solidify the department as a single unit, a combined advisor board served useful in gaining perspectives on the new TCM B.S. program and in discussions of curriculum. With new priorities to evaluate priorities and improve programs, OLS and TCM faculty both worked on identifying and expanding efforts to establish individual program advisory boards. TCM continues to select new members; however, the OLS Industrial Advisory Board was re-established formally in the spring semester with the goal of engaging current organizational leaders and industry professionals in discussions of future program directions. A balance of technology/industry leaders, entrepreneurs, and HR professionals joined Dr. Feldhaus in late May 2016 to discuss next steps and build mutually beneficial partnerships.

While the above initiatives are not exhaustive of all assessment and activities to support student learning in TLC over the past year, these are the successes that most align with priorities set by the department in August 2016.

Priorities for Further Improvement in Assessment, Teaching, and Learning

The final TLC department meeting set in motion the priorities for AY 2016-17. During the year of transition, OLS and TCM accomplished a great deal in terms of improving communication, creating a process for supporting assessment activities for service courses, completing a new assessment plan for the B.S. in OLS, and developing an administrative structure to support operational excellence. In addition to the upcoming undergraduate program review, TLC has set several priorities for continuing efforts to improve teaching, learning, and assessment activities:

- Complete new course requests to meet instructional and students assessment needs for ENT programs (TCM 41500) and the new TCM B.S. degree (TCM 10000, TCM 49000). The latter two courses will complete the Core TCM B.S. curriculum and permit finalizing the program-level assessment plan (parallel to the OLS B.S. plan completed in AY 2015-16).
- Further revise ENT service courses in collaboration with faculty teaching in EET, ECET, and MET (initial meetings for updating course content/assessment were held in May 2016).
- Improve instructional design and mapping of learning activities and assignments across all course delivery formats (traditional/regular, hybrid, and online synchronous, and competency-based learning through faculty training and resource development).
- Engage all part-time faculty teaching service courses in departmental efforts to calibrate (norm) the following rubrics now being used in course-level assessment of student learning outcomes (all rubrics below are modified from the AAC&U Value Rubrics):
    - Written Communication
    - Oral Communication
    - Teamwork
    - Integrative Learning
    - Life-long Learning
- Complete first year of Assessment Data Collection Rotation and archive brief reports for each service course.

- Apply for internal and external grants, especially in the areas supporting the Scholarship of Teaching and Learning (SoTL).
- Execute freshman and senior surveys each fall/spring semester to all TLC undergraduate students.
- Utilize results from undergraduate program review to set priorities for 2017 – 2025.
- Conduct international searches to fill vacant tenure-faculty positions.
- Continue recruitment efforts with Ivy Tech, begun in February 2016. Revise and further develop course and program-level articulation agreements with ITCC and VU.

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Appendix A

TCM 36000 ABET Assessment Report (FA 2015 Data, Reported Spring 2016)

The Department of Technology Leadership and Communication (TLC) offers Technical Communication (TCM) courses, an undergraduate certificate program in TCM, and a Bachelor of Science in TCM. While there is no accreditation body for TCM, because of the service classes TCM offers for students enrolled in School of Engineering and Technology majors, TCM faculty once again participated in assessment activities for the purposes of providing evidence of student learning outcomes to align with the ABET criteria indicating the ability to communicate effectively. Due to several role changes effective August 2015; including a new interim department chair, new undergraduate program director, new TCM assessment coordinator, and other shifts in responsibility at the department level; assessment efforts and the overall assessment plans (course and program-level) are currently under review and revision. For these reasons, all fall 2015 semester activities focused specifically on the assessments for oral and written communication skills of students enrolled in TCM service courses designed to provide and support ABET learning outcome G ("Students will possess an ability to communicate effectively").

Prior to fall 2015, TCM full-time faculty collected artifacts and collaborated in the assessment of overall written communication skills. Faculty members from engineering departments across the School were invited to participate in assessment of overall oral communication skills by observing final student presentations. During academic year 2013 – 14, final student papers and videos of final oral presentations were uploaded to IUBox for review and assessment. With increasingly low participation among faculty peers within the School, TCM purchased digital recorders to offer faculty the opportunity to review archived oral presentations and create opportunities to remotely participate in the assessment process. The TCM undergraduate program director developed an online form (survey) and a spreadsheet was automatically generated by the forms as they were completed by the assessors. Again, the assessment process resulted in very few faculty responses. Beginning in academic year 2014 – 15 and continuing today, TCM full-time and adjunct faculty support all assessment activities and reporting related to TCM service courses. TCM 36000 was significantly revised in the 2014 – 15 to target several written and oral communication skills identified as "needs improvement" from previous assessment activities. Goals from the previous assessment reports indicated a need to change the assignments to support student learning, improve participation in assessment activities, and convert final collection of assessment data to a fully online format. TCM was successful in two of three improvement areas; however, with only two full-time TCM faculty dedicated to undergraduate service course support, the department is currently developing a comprehensive assessment plan for all services courses that will include annual data collection, analysis, and reporting practices that seeks to eliminate department and faculty time constraints related to regular accreditation activities in the School.

Fall 2015 student artifacts were collected and data was analyzed for ABET outcomes for two undergraduate TCM courses: TCM 32000 (Written Communication in Science and Industry)

and TCM 36000 (Communication in Engineering Practice). The following pages provide a summary of student outcomes in both written and oral communication based on artifacts collected and reviewed at the end of the fall 2015 term. This document will be synthesized as a component of the TLC Department's annual PRAC report and will serve as a tool for continuous improvements as TCM seeks to improve teaching, learning, and assessment practices.

TCM 36000: Communication in Engineering Practice (2.0 CR)

TCM faculty recently revised assignments and learning activities to address areas for improvement for student written and oral communication outcomes based on previous assessment data for TCM 36000 *Communication in Engineering Practice.* The TLC department taught a record 8 sections of TCM 36000 in the fall of 2015 with 115 students enrolled in the 12-week fully in-person offerings. The 12-week instructional mode was part of a department-level pilot to deliver course content in identical formats during the spring, summer, and fall terms of 2015. Feedback from both students and instructors during the pilot indicated both advantages and disadvantages to the pilot format. Students reported that the 12-week class reduced the quantity of "busy-work" and idle classroom time they associate with typical communication courses; however, all students surveyed believed that they did not have adequate time to complete group assignments that required use of classroom technology. Instructors agreed that there was need for further discussion and planning to better organize both group and individual assignments and ensure student success in both. The TCM Undergraduate Program Director, TCM 36000 Course Coordinator, and all instructors scheduled to teach TCM 36000 for the spring, summer, and fall 2016 terms met in November and December of 2015 to develop a schedule to better support student learning outcomes using the iFixit team project and individual interview assignments.

During the fall 2015 semester, students planned, managed, and learned technical communication skills through completion of iFixit Team Projects in all sections. Team iFixit project planning included development of a team proposal, contract, milestones, oral and written progress reports, personal learning reflections, usability testing, final reports and an oral poster presentation at the end of the semester. Students who successfully complete TCM 36000 are expected to demonstrate their ability to:

- write and speak appropriately for people in business and industry;
- research, select, organize, and present technical knowledge to specific audiences in organizational settings;
- plan, prepare, revise, and deliver communication that uses language and visual elements appropriately for the reader and circumstances; and
- understand and manage communication processes in individual and collaborative projects.

In fall 2015, artifacts submitted by 91 engineering students from 7 course sections were analyzed for written and oral skills assessment in TCM 36000, a course taken by Biomedical Engineering (BME), Electrical Engineering (EE), Electrical and Computer Engineering (ECE), Mechanical Engineering (ME), and Motorsports Engineering (MSTE). Written and oral communication skills were measured in two assignments: Final Recommendation Report and Final Oral Presentations. Electronic forms were used in the assessment process; an excel

spreadsheet with all data collected was submitted to engineering programs for further analysis to support current self-study activities.

With the purpose of simplifying assessment processes, summative assessment was performed by the course coordinator and 3 TCM 36000 instructors involved in planning the course activities and assignments. Evaluation results for all TCM 36000 engineering majors enrolled at the end of the semester (N=91) are included in this summary report. Of the 115 total students enrolled in TCM 36000 during the fall 2015 term, data was omitted from this report for 24 students including: 3 students administratively removed from the courses per campus guidelines for Administrative Withdraw, 2 non-engineering students enrolled in TCM 36000 sections, and for an entire section (no formal assessment data was collected or analyzed for class number 25267).

Enrollment by Major

Of the 97 TCM 32000 students enrolled in the 7 sections evaluated for written and oral communication skills, 91 were engineering students with 45 enrolled in Mechanical Engineering, 21 in Electrical Engineering, 8 in Computer and Electrical Engineering, 10 in Biomedical Engineering, and 7 in Motorsports Engineering. Written communication skills were assessed for all 91 students in 7 sections taught by three instructors (including two sections taught by the course coordinator). In total, F grades were awarded to 9 students (5 FN/FNN grades were based on lack of student participation in the course and 4 F grades were performance-based). One student was awarded an incomplete (I-grade), but he failed to fulfill the course requirements and the incomplete changed to an F-grade in the spring 2016 term.

Assessment of Written Reports

During fall 2015, a total of 91 written final products were collected from engineering students in 7 TCM 36000 sections and assessed holistically by four TCM faculty at the conclusion of the term. All four faculty members taught TCM 36000 for 2 or more years and recently collaborated on decisions related to assignments and assessment of student learning outcomes. Using electronic versions of grading criteria, the jurors scored each of the criteria on a scale of 1-4 with 1 representing needs improvement and 4 representing mastery of the learning outcome. The goal of the assessment was two-fold: (a) 70% or more of the students achieve an average score of 2.0 or above (4.0 point scale); and (2) 70% or more of the criteria would be judged at 2.0 or above.

Individual student achievement was assessed by major for 13 criteria used to evaluate student learning outcomes in written communication. ME students achieved TCM's assessment goal for creating visuals (Mean Score = 2.67, with 50% of students scoring 3.0 or 4.0 points) and in documenting sources (Mean Score = 2.78, with 60% of students scoring 3.0 or 4.0 points). BME student data was very similar to ME with students performing well in the visual elements of written communication and in documenting external content/sources. Students enrolled in ECE achieved success in 11 of 13 criteria with opportunities for improvement indicated for in basic written communication skills (grammar, punctuation, and spelling) and in consideration of

length based on audience, situation, and content. The two areas indicating engineering students needed the most improvement in the 2012 TCM assessment data are now the two strongest areas of student learning. While this indicates success in recent course revisions and improvements to student learning activities, the comprehensive assessment of 91 engineering student artifacts presents a number of opportunities to determine strengths and weaknesses by major.

Assessment of Oral Presentations

For the fall 2015 term, students' oral presentations were recorded and archived; recordings and student presentation slides were evaluated by two members of the TCM 36000 instructional team. Due to time constraints, data was collected for only 28 engineering students enrolled in 2 TCM sections and oral communication skills were assessed holistically by two TCM faculty members at the end of the term. As was true in the assessment of written communication skills, the goal of oral communication assessment was two-fold: (a) 70% or more of the students would achieve an overall average score of 2.0 or higher; and (b) 70% or more of the criteria would be judged at 2.0 or higher. One noted improvement from previous assessment years was revision to the criteria and scale used for data collection and reporting (4.0 point scale used for both written and oral communication skills assessment).

Mean scores for 7 of 9 oral communication criteria evaluated for 28 engineering students enrolled in TCM 36000 during the fall 2015 term were higher than 2.5 (4.0 scale). Of the 9 criteria, 3 of them were evaluated above 3.5 indicating effective presentation overviews, introductions, appropriate language and consideration of audience in terms of content. Areas for improvement were indicated for presenting logical and sound data/analysis and for applying consistent grammar in oral presentations. Data indicate that the students in TCM 36000 continue to perform adequately in oral communication with a mean score of 2.95 for overall impression and a mean score of 3.29 for visuals designed to support content delivery for oral presentation.

Continuous Improvement Activities

The purpose of course and program-level assessment activities is to reflect, learn, share, and use data to drive discussions and next steps for improving teaching methodologies, curriculum, and increase student learning to better prepare them for future careers. With many new roles and responsibilities and limited faculty resources, TCM uses the data it collects as a basis for setting priorities and building efficiencies for continuous program improvements. The assessment of written and oral communication skills in TCM 36000 clearly show opportunities to improve student learning outcomes related to

Although scales were not consistent with data collected in the fall of 2012, students did improve in one of the areas identified in the previous report: giving credit to and documenting sources. Improving student achievement in the application of APA format and avoiding plagiarism have been a focus of the department and TCM faculty for the past 3 years. While we will continue to include activities to help students identify and make decisions related to sourcing content for both written and oral communication, moving forward we will look at ways to help students achieve success in analysis and presentation of data, selecting and applying consistent communication conventions such as grammar and language.

TLC is a relatively new department, under leadership transition. Our ongoing efforts to document and revise the assessment process for service courses and develop an effective assessment plan for both bachelor's degrees requires constant attention and time. While TCM is challenged to resource these efforts, we are dedicated to becoming exemplars in the assessment of communication and leadership learning to support accreditation and ongoing assessment processes across the school and campus.