12.17.13

TO: Sally Gregory Kohlstedt, Acting Vice Provost and Dean of Graduate Education
FROM: Ann Hill Duin, Professor and DGS for MSSTC, Writing Studies Department
RE: Pilot Program on Graduate Student Learning Outcomes; MSSTC progress report
CC: Laura Gurak, Professor and Chair, Writing Studies Department

The principal goal of the Graduate School’s Pilot Program to Develop Graduate Student Learning Outcomes is “graduate program self improvement” (9.15.13, Sally Gregory Kohlstedt, Acting Vice Provost and Dean of Graduate Education). As part of the pilot phase of this initiative, Acting Vice Provost Kohlstedt asked that the Master of Science in Scientific and Technical Communication (MSSTC) program do the following:

● map its student learning outcomes to the draft principles;
● identify any outcomes that could not be mapped to the draft principles;
● identify additional principles that are relevant for the program’s outcomes; and
● summarize the process by which the program arrived at these results.

After a brief overview of this program, we provide detail on previous related work (2012-13), current work (Fall term) to date on this initiative, and work planned for Spring term.

**Technical communication** positions are expected to grow nationally by more than 18% (8,900 jobs) between 2008 and 2018 (*Bureau of Labor Statistics*). Technical communicators work with complex material in an environment where information is digitized and produced using complex information management systems. This profession requires education and expertise in technical content development, information design and architecture, visual communication, research, and usability.

The MSSTC program currently includes 21 credits across these courses: Intro to S&TC, Information Design, Editing and Style, Visual Rhetoric, Usability and Human Factors, International Professional Communication, Proposals & Grant Management, Science Writing, Science, Technology and the Law, Writing with Digital Technology, and Professional Practice. The M.S. also includes a 12-credit competency requirement.

Students come from diverse industries and backgrounds including journalism, biology, English, health care, art history, chemistry, and many others. Upon successful completion of the program, students acquire positions or are promoted in small, medium, and large companies that produce products and services that require technical documentation, information design and management. Locally, students work for Medtronic, banking institutions, medical centers, higher education, software companies, electronics firms, and other industries. Students also pursue opportunities in this University’s professional schools of education, law, engineering, and public health.
During the 2012-13 academic year, after a series of MS committee meetings culminating in a Writing Studies faculty retreat, draft learning outcomes were developed. Graduates of the M.S. in S&TC program should be able to do the following:

- Apply rhetorical theory/principles to scientific and technical communication;
- Visualize and design content for multiple media and contexts;
- Lead local/virtual/global teams in the design, development, and evaluation of scientific and technical communication;
- Envision and conduct research to meet user and strategic work needs; and
- Apply STC research to a specific industry (e.g., health, technology, public policy, education).

Concurrent with a focus on learning outcomes, advising of students began to follow a personalized learner, applied research direction that includes the evaluation of student’s incoming competencies and research interests; development of a personalized learning/research plan (vs. taking one set of courses); collaboration with student’s current workplace to position the student’s research plan; student completion of a final capstone course; and student completion of an outside concentration area.

During the 2013-14 academic year, we are revising materials and sites / social media to represent a forward thinking, applied research program; clarifying learning outcomes and opportunities; and updating courses to reflect a stronger focus on outcomes and applied research.

During Fall term, as part of the Pilot Program on Graduate Student Learning Outcomes, we began by compiling learning objectives from program syllabi (10 courses) and mapping them to both the Graduate School principles and the MSSTC student learning outcomes to identify in which courses the specific principles and/or outcomes were given high, moderate, or low emphasis. All documents were made available (google docs) to all Writ faculty.

We identified that, in the MSSTC program, principles and outcomes are achieved primarily via course distribution. Communication, scholarly formation, professional responsibility, leadership, personal/professional management, and global focus are distributed throughout the curriculum, with specialized competencies in design, law, and usability achieved via course concentration.

We then completed the following high-level mapping of MSSTC student learning outcomes to the Graduate School’s draft principles. All outcomes can be mapped to the draft principles.

<table>
<thead>
<tr>
<th>Graduate School - draft principles</th>
<th>Mapping of MSSTC learning outcomes to each principle</th>
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<tbody>
<tr>
<td>1. Scholarly formation</td>
<td>Envision and conduct research to meet user and strategic work needs</td>
</tr>
<tr>
<td>2. Communication</td>
<td>Apply rhetorical theory/principles to STC Visualize and design content for multiple media and contexts</td>
</tr>
<tr>
<td>3. Leadership and collaborative skills</td>
<td>Lead local/virtual/global teams in the design, development, and evaluation of STC Construct and foster connected, collaborative, interactive environments</td>
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</table>
4. Global context | Lead local/virtual/global teams in the design, development, and evaluation of STC

5. Professional responsibility | Apply STC to a specific industry

6. Personal and professional management skills | Lead local/virtual/global teams in the design, development, and evaluation of STC

**For student input,** we met with 11 current program students to survey their comparative interests in the competencies represented by the six Graduate School SLOs. They indicated their preferences anonymously, using a scale of 1-7, with 7 indicating the highest level of interest.

![Weighted Average Diagram]

**Graduate School Student Learning Outcomes Ranked by Interest**

We also asked students to rank order the MSSTC learning outcomes.

![Number of times ranked in top 3 Diagram]

**MS Program Learning Outcomes Ranked by Interest**
In a follow up conversation on the topic of learning outcomes for our program, students raised questions regarding teaching and leadership opportunities in the STC field and even greater application of research and tool-related skills to workplace and professional settings.

**For faculty input,** in addition to discussion during faculty meetings and concurrent work by the MS committee, the MSSTC DGS is meeting individually with all faculty who are teaching courses as part of this program. The purpose of each meeting is to map each course’s learning outcomes to both the Graduate School principles and the current MSSTC learning outcomes. Input from two meetings illustrates the range of responses:

Professor Mary Schuster teaches the Intersections of STC and the Law course. During our conversation, we identified strong alignment with Graduate School principles including Communication (and specifically the writing of briefs in law settings); Professional Responsibility (awareness of civic responsibilities); and Personal and Professional Management Skills (being self-motivated and autonomous). We noted less alignment with the current MSSTC learning outcomes, and identified the course as a strength within the competency area for those students focusing on areas such as patent law.

Professor Lee-Ann Kastman Breuch teaches the Usability and Human Factors course. During our conversation, we identified strong alignment with all six Graduate School principles and all six MSSTC learning outcomes. This provided clear indication to continue to advise students to take this course as part of the core of their program.

As a result of these conversations with current students and faculty, we have identified the need for an additional MSSTC learning outcome that focuses more intently on ethics. Another result, based on the mapping of course learning objectives to MSSTC learning outcomes, included the realization of our ability to provide a set of totally online courses to fulfill these learning outcomes. We also identified that learning outcomes can be fulfilled with fewer credits, 30 as opposed to the current 33 cr requirement.

Additional related work during Fall term has included the following:

- **DGS dashboard:** We are prototyping a DGS dashboard and student program template for marking student progress on learning outcomes throughout their curricular and other work.
- **Personal Learning Networks (PLNs):** We leveraged current work as part of a Provost Office eLearning grant with this SLO effort. PLNs frame an intentional strategy for developing social and technical networks in support of lifelong learning and professional development. Here we have been integrating personal learning strategies with a goal of increasing connectedness among learners, professionals, and the broader community.
- **Quality Metrics:** We also worked to leverage the SLO work with the Quality Metrics efforts underway across the University and CLA. The following changes here align with the SLO effort. These include our creation of a forward thinking, research-focused, sustainable degree; greater theory and applied research focus to align with faculty strengths in Writing Studies and throughout the University; increased engagement with faculty and students through the creation of a streamlined path for access to faculty in Writing Studies and across the University; and greater engagement with industry through creation of an advisory group and increased opportunities to work with faculty, staff, and students.
- **Alignment with national work:** The DGS attended and presented at a national meeting in this field, the Council of Programs in Technical and Scientific Communication. A key theme included discussion of learning outcomes work being developed and deployed across institutions, some of
which are part of the University of Minnesota’s peer group institutions. During Spring term, we plan to complete this peer institution comparison.

Additional work during Spring term will include meetings with alumni to share and refine the learning outcomes; meetings with related areas across the University to share these results and forge additional partnerships; and meetings with key industries that employ our students, again, for the purpose of additional input and refinement of the learning outcomes.

Thank you for the opportunity to be part of these pilot initiatives. We are pleased to report on our steady progress toward the goal of “graduate program self improvement.”

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1 I wish to thank MS Committee Committee members for their input and direction: Anne Lazaratan, Joe Moses, Nan Nelson, and Jim Hall; and all Writing Studies faculty for review and input on this report.