1. Attendance:
Aero – Jen-Ping Chen
AVN – Chul Lee
BME – Rita Alevriadou
CHE – Not present (Dave Tomasko)
CEGS –
   Civil – Not present (Chuck Moore)
   Environment – Bob Sykes
CSE – Bruce Weide - Chair
ECE – George Valco
ENG PHY – Not present (Richard Hughes)
FAB – Alfred Soboyejo
IWSE –
   ISE – Not present (Blaine Lilly)
   WLD – Not present (Charlie Albright)
MSE – Not present (Rob Wagoner)
ME – Mike Moran
Graduate Student – Justin McKendry (Not present Shivraman Giri)
Undergraduate Student – Linda Wang (Not present Ashley Hand)
Secretary – Ed McCaul
Guests – Bob Gustafson, Peg Steele

2. The Minutes from the 11 April 2007 meeting were approved as written.

3. Ed McCaul informed the committee of the recommendations from the Course Proposal Subcommittee.
3.1. The subcommittee recommends that the course proposals for CSE 221, 581, and 781 be approved. All of these proposals deal with updating their prerequisites. In addition, the honors section is being dropped from CSE 221 due to low enrollment.
3.2. Rita Alevriadou made a motion that these course requests be approved. Chul Lee seconded the motion. A vote was taken: 10 approved, 0 opposed, and 0 abstentions. The motion passed.

4. Mike Moran informed the committee that Subcommittee A is recommending that the Environmental Engineering BS Degree Proposal be approved subject to approval of the proposal’s accompanying course requests by the Course Proposal Subcommittee. Bob Sykes informed the committee that a degree in Environmental Engineering would bring the program into line with other Environmental Engineering degree programs throughout the country. Students taking the new degree would take more courses in Environmental Engineering and less in Civil Engineering. However, any course needed by both programs would be cross listed. Rita Alevriadou stated that the Course Proposal
Subcommittee would have a recommendation to the full committee on the course requests at the committee’s next meeting.

5. The subject of what process should be used when considering curriculum proposals was discussed. The general feeling was that the curriculum proposal and any accompanying course proposals should be considered concurrently by the assigned Curriculum Proposal Subcommittee and the Course Proposal Subcommittee. In addition, neither the curriculum proposal nor the accompanying course proposals should be sent forward until both have been approved by the full committee. Bruce Weide stated that he would draft a policy that would codify this process.

6. Mike Moran informed the committee that Curriculum Proposal Subcommittee A is recommending that the Welding Engineering Curriculum Revision Proposal be approved by the full committee. This curriculum proposal does not have any accompanying course proposals. Mike Moran made a motion that the Welding Engineering Curriculum Revision Proposal be approved. Jen-Ping Chen seconded the motion. The floor was opened for discussion.
   6.1. The question was raised as to whether ISE 406 is part of the Selected Core. The response was that yes it was.
   6.2. A vote was taken: 10 approved, 0 opposed, and 0 abstentions. The motion passed.

7. The committee secretary asked the committee if this proposal should be forwarded to the Council on Academic Affairs (CAA). The floor was opened for discussion.
   7.1. The comment was made that anytime a required course or the number of hours to graduation is changed the request should go to CAA.
   7.2. The comment was made as to why it would be necessary to send a proposal to CAA if a program was dropping one of their own required courses for another one of their own courses.
   7.3. The principal question appears to be how much autonomy the college has when it comes to curriculum.
   7.4. The decision was that in the case of Welding’s proposal that it should be sent to CAA.

8. Bob Sykes informed the committee the Curriculum Proposal Subcommittee B has not yet addressed the Aero Curriculum Proposal nor the City and Regional Planning Degree Proposal. The subcommittee has had meetings on the Aviation MS in Air Transportation Systems Proposal and there is one major issue that still needs to be resolved. The subcommittee will be meeting with Aviation’s department chair in the near future and should have a formal report on all three proposals at the committee’s next meeting.

9. The committee was presented with the revised Standards of Academic Performance for both Aeronautical and Electrical Engineering. Both of these
policies have been reviewed and approved by the Academic Standards and Progress Committee. The committee was informed that information on pre-majors had been added to both policies. George Valco made a motion that both policies be approved. Alfred Soboyejo seconded the motion. There being no discussion a vote was taken: 10 approved, 0 opposed, and 0 abstentions. The motion passed.

10. The committee was informed that Aviation has requested that CSE 215 be dropped from the Computer or Information Science Topic in the General Engineering Subsection of the Selected Core and be replaced with CSE 230. This request has been approved by the Core Committee and has the support of CSE. This request is being brought to CCAA as Aviation is requesting a change to the college’s Selected Core.

10.1. Bob Sykes made a motion that CSE 215 be dropped from the Computer or Information Science Topic in the General Engineering Subsection of the Selected Core and be replaced with CSE 230. Mike Moran seconded the motion. The floor was opened for discussion. The question was asked as to whether CSE is planning on offering CSE 215 in the future. The reply was that CSE has no plans at this time to offer CSE 215. There being no further discussion a vote was taken: 10 approved, 0 opposed, and 0 abstentions. The motion passed.

10.2. Bob Sykes made a motion that CCAA approve Aviation’s request to change their curriculum from requiring CSE 215 to requiring CSE 230. Mike Moran seconded the motion. There being no discussion a vote was taken: 10 approved, 0 opposed, and 0 abstentions. The motion passed.

11. Rita Alevriadou presented the revised College Syllabus Format Policy to the committee (attached). The format has been revised so that instructors are encouraged rather than required to give all of their students a course syllabus and that they are encouraged to include disabilities and academic misconduct statements. The CCAA Submission Syllabus format is the same as in the original proposal. The purpose of the syllabus format is to achieve consistency on submitted syllabi and to help prepare the programs for ABET visits. Rita Alevriadou made a motion that CCAA adopt this policy as written. Alfred Soboyejo seconded the motion. The floor was opened for discussion.

11.1. The question was asked as to how instructors will learn about this policy. Bob Gustafson stated that he would send a message out to all faculty, with the policy attached, telling them about the policy. In addition, the body of the message would include information about the suggested disabilities and academic misconduct statements.

11.2. The comment was made that academic misconduct is a problem at both the undergraduate and graduate levels. It was pointed out that academic misconduct is discussed in all of our Engineering 100 courses as well as Engineering 181 and 183. However, graduate students do not get as much information on this topic as undergraduate students do. The suggestion was made that Bob Gustafson take the topic of how to better
inform our graduate students about academic misconduct to the Graduate Chairs Committee. Bob stated that he would.

11.3. The question was asked as to what is meant by “Representative Lab Assignments” in the submission syllabus. The reply was that this is where information about lab assignments should be included (if applicable) to give the Course Proposal Subcommittee a better idea of what is involved in lab-oriented courses.

11.4. There being no further discussion a vote was taken: 10 approved, 0 opposed, and 0 abstentions. The motion passed.

12. Bob Gustafson presented the Preliminary Report of the Task Force on Minors for Non-engineering Students to the committee (attached). The Task Force came up with two potential non-engineering audiences for minors that we could offer. The first group is those students who would be working directly with engineers in the future and have good math skills. The second group is those students who want to increase their technological literacy. This project will fall under the new Engineering Education Innovation Center once it is operational. Bob would like everyone to take the report back to the faculty in their department and send him any feedback that anyone may have. Bob asked the committee if anyone had any comments at this time.

12.1. Mike Moran made the comment that the term engineering should not be used with these minors. Mike feels that ABET would not concur with such usage. The response was that there are a number of similar minors in other universities with similar names and that the word “engineering” is being used as an adjective in the title not as a noun.

12.2. The committee secretary was asked to send the report electronically to all committee members again.

13. Judith McDonald updated the committee on changes in graduation checkout and the petition process. Degree audits (DARS) are being used for graduation checkout. However, its effectiveness varies tremendously from department to department. The Registrar’s Office is working closely with program advisors to update the system so that it will become a more useful tool. The hope is that by the end of the summer DARS will be more effective. This has had a major impact on how petitions are processed. The college office is now reviewing (approving/denying) substitution petitions only for GEC, Engineering Core, and Engineering Selected Core courses and posting these substitutions on DARS. Substitutions for major courses will be reviewed (approving/denying) by the departments and the department advisor will post these substitutions on DARS.

14. Being out of time the meeting was adjourned at 11:30 AM.

C: College Faculty
CCAA File
College of Engineering Syllabus Format

The purpose of this policy is to achieve a degree of consistency on College of Engineering syllabi and to make preparation for future ABET visits easier. There are two different types of syllabi within the College of Engineering. The first is the one that is submitted with a course request and, with at most slight changes, can be used for ABET purposes. The second is the syllabus that all instructors are encouraged to give to every student taking a course. This syllabus should contain additional information beyond that required for CCAA submission or ABET.

CCAA Submission Syllabus

Any new course or course change request sent to the College of Engineering must include a syllabus with the following information in the order shown, or it may be returned to the department without further review by CCAA. Syllabi should not be more than two pages in length with a font size of 12-point and one-inch margins all around.

- Department, Number, and Title of Course
- Designation as a ‘Required’ or ‘Elective’ course in a particular Engineering degree program
- Description (25 words for Course Description Bulletin)
- Level, Credits, Class Time Distribution
- Prerequisites
- Quarters Offered, General Information, Exclusions, Cross-Listings, etc.
- Learning Outcomes
- Textbooks and Other Materials
- Topics (including approximate duration, adding up to the course length in classroom hours or weeks)
- Representative Lab Assignments (if applicable)
- Grading Plan
- Relationship to ABET Criterion 3 Outcomes (a-k)
- Relationship to ABET-Accredited Program Outcomes
- Preparer Information (including date of preparation)

Classroom Syllabus

The College of Engineering encourages all instructors to give a course syllabus to every student taking their course. A classroom syllabus should contain or reference at a minimum the information in the CCAA-approved course syllabus as described above as well as disabilities and academic misconduct statements. The syllabus may (and usually will) contain details beyond that required for CCAA submission and by ABET as there is no limit set by the college on the length of a syllabus handed out to students.
Disabilities Statement
A clear statement on disabilities should be included in the classroom syllabus. The following or a very similar statement is recommended in order to be consistent with OSU policies:

“Any student who feels s/he may need an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. Please contact the OSU Office for Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies.”

Academic Misconduct Statement
A clear statement on academic misconduct should be included in the classroom syllabus. The following or a very similar statement, with course-specific details as appropriate, is recommended in order to be consistent with OSU policies:

“Any student found to have engaged in academic misconduct, as set forth in the Code of Student Conduct Section 3335-23-04, Prohibited Conduct, will be subject to disciplinary action by the university. Academic misconduct is any activity that tends to compromise the academic integrity of the university, or subvert the educational process.”

Any instructor or department may include additional information and examples of academic misconduct that will not be tolerated.
2 March 2007

TO:   Core Curriculum and College Services Committee
      College Committee on Academic Affairs

FR:   Bob Gustafson

RE:   Preliminary Report of Task Force on Minors for Non-engineering Students

1. Charge to Committee and Membership

In December of 2006, both the Core Committee and CCAA agreed to the establishment of a joint task force to consider what the College of Engineering could offer for non-engineering students in terms of one or more minors, with particular focus on the area of technological literacy. Members of the task force are Sandra Doty (Physics), Bob Gustafson, Chair (Associate Dean), Blaine Lilly (IWSE), Ed McCaul (College Office) Ed Newman (ECE), Andrea Severson (Advising). The committee has met bi-weekly to work on this topic.

The purpose of this report is update both committees on progress of the Task Force to date and seek input regarding the minors being proposed.

2. Overview of Outcome

   **Working Definition for Technological Literacy**

A review of literature and existing programs showed that there is no universally accepted definition of technological literacy. However the committee chose to work from the basic description and general learning objectives developed by a recent Technological Literacy Task Force in the Colleges of the Arts and Sciences (See Appendix 1). Other useful description related to technological literacy can be found through the International Technology Education Association (ITEA) documents (Found at [http://www.iteaconnect.org/Publications/publications.htm](http://www.iteaconnect.org/Publications/publications.htm)). Which can be summarized as:

- A technological literacy is the ability to use, manage, assess, and understand technology. (ITEA)
- A technological literate person is a person who understands – with increasing sophistication – what technology is, how it is created, how it shapes society, and in turn is shaped by society. (ITEA)

   **Potential Audiences**

In order to offer the most value in a minor and meet learning objectives in the most effective fashion, the task force came to the conclusion that it is best to view the
potential audience for minors we may offer as two groups. The first group being those that will likely be working most directly with engineers in the future and who can be expected to have mathematics capability through beginning calculus. A minor for this group is termed Engineering Sciences Minor. The second group would be those that are looking to the minor to build their technological literacy in a more general sense and who may not have as high a level of quantitative coursework background. A minor for this group is termed the Technological Studies Minor. As will be seen in the following section, the Task Force identified examples of these key audiences, learning goals for each minor, key curriculum components, and a draft curriculum structure.

3. Model Curriculum Structure for Two Minors

Table 1. Construct for Two Minors for Non-engineering Students

<table>
<thead>
<tr>
<th>Engineering Sciences Minor</th>
<th>Technological Studies Minor</th>
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</thead>
<tbody>
<tr>
<td><strong>Key Audience</strong></td>
<td></td>
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<tr>
<td>Students who have an interest in working with technology experts/engineers and in technology based industry/environments. <em>Examples</em>: Business majors; Economics majors; Science Majors <em>Assumptions</em>: Competence in mathematics through beginning concepts of calculus</td>
<td>Students who have interest in understanding technology at a level that will help make them be more informed citizens and perhaps more attractive to employers. <em>Examples</em>: Humanities major; Arts Major <em>Assumption</em>: No particular prerequisites</td>
</tr>
<tr>
<td><strong>Learning Goals - At the completion of the minor, students will be able to:</strong></td>
<td></td>
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<tr>
<td>1 - demonstrate a basic understanding of the engineering design process</td>
<td>1 - appreciate the importance of methods and underlying assumptions used in cost-benefit analysis and risk-benefit analysis by engineers.</td>
</tr>
<tr>
<td>2 – perform simple analysis and estimation using engineering methodology</td>
<td>2 - achieve a survey-level understanding of why particular materials and processes are used to produce simple engineering devices and systems</td>
</tr>
<tr>
<td>3 – understand the capabilities and limitations of basic manufacturing processes and engineered systems</td>
<td>3 - better understand the role of technology (engineering) in society and the interactions of technology (engineering) with their major field</td>
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<tr>
<td>4 – make informed decisions about the desirability of</td>
<td>4 – understand how to access and interpret reliable information</td>
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<tr>
<td>engineering activities by weighing the benefits of those activities against the risks.</td>
<td>to make informed decisions regarded technological issues</td>
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<tr>
<td>5 – work effectively as a member of a team including technological experts.</td>
<td></td>
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<tr>
<td><strong>Key curriculum components</strong></td>
<td><strong>Understand fundamentals of engineering science and design(beginning calculus prerequisite)</strong></td>
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<tr>
<td></td>
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<tr>
<td>• Introduction to Engineering</td>
<td>• Introduction to Engineering</td>
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<tr>
<td>o Design Process</td>
<td>o Design Process</td>
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<tr>
<td>o Communication with graphics tools</td>
<td>o Communication with graphics tools</td>
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<tr>
<td>o Numerical approaches to problem solving</td>
<td>o Quantitative approaches to problem solving</td>
</tr>
<tr>
<td>• Science base and complimentary engineering science base</td>
<td>• Science base</td>
</tr>
<tr>
<td>• Computational technology competence</td>
<td>• Computational technology competence</td>
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<tr>
<td>• Appreciation of interaction of technology and society</td>
<td>• Appreciation of interaction of technology and society</td>
</tr>
<tr>
<td>• Capstone interdisciplinary teamwork experience.</td>
<td></td>
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<tr>
<td><strong>Model Curriculum (DRAFT)</strong></td>
<td><strong>Prerequisites: Math 117, 131 or 151; and Natural Science Dependent on Engineering Science selected.</strong></td>
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<tr>
<td>Engineering Science (3 credits minimum):</td>
<td>Natural Science (5 credits)</td>
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<tr>
<td>-----------------------------------------</td>
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</tr>
<tr>
<td>AERO 200 (5) Introduction to Aerospace Engineering</td>
<td>Biology 101 Introductory Biology</td>
</tr>
<tr>
<td>CE 400.01 (2) Introduction to Surveying</td>
<td>Biology 102 Human Biology</td>
</tr>
<tr>
<td>CE 511 (3) Introduction to Environmental Engineering</td>
<td>Chemistry 101, 102 Elementary Chemistry</td>
</tr>
<tr>
<td>FABE 225 Introduction to Food, Agricultural and Biological Engineering</td>
<td>Chemistry 121, 122, 123 General Chemistry</td>
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<tr>
<td>ISE 311 (3) Manufacturing Engineering</td>
<td>Physics 106, 107, 108 Physics by Inquiry</td>
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<tr>
<td>ISE 406 (4) Industrial Quality Control</td>
<td>Physics 111, 112, 113 General Physics</td>
</tr>
<tr>
<td>ISE 504 (3) Engineering Economic Analysis</td>
<td>Physics 131, 132, 133 Introductory Physics</td>
</tr>
<tr>
<td>ISE/ME 682 (4) Product Design Fundamentals</td>
<td></td>
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<tr>
<td>MSE 205 (3) Introduction to Materials Science and Engineering</td>
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<tr>
<td>MSE 281 (1) Materials Processing Laboratory</td>
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<tr>
<td>WE 300 (3) Survey of Welding Engineering</td>
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<tr>
<td>WE 350 (1) Introduction to Welding Laboratory</td>
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<tr>
<td>II&amp;VCD 230 (3) Basic Design Concepts for Non-majors</td>
<td></td>
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<tr>
<td>Educ: T&amp;L 220 (3) Design of constructed and Manufactured Goods</td>
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<table>
<thead>
<tr>
<th>Computation Technologies (4 – 5 credits)</th>
<th>Computation Technologies (4 – 5 credits)</th>
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<tbody>
<tr>
<td>CSE 201 (4) Elementary Computer Programming</td>
<td>CSE 201 (4) Elementary Computer Programming</td>
</tr>
<tr>
<td>CSE 202 (4) Introduction to</td>
<td>CSE 202 (4) Introduction to</td>
</tr>
</tbody>
</table>
### New Course Descriptions:

**ENG 2xx (5) Designing our World: An Introduction to Engineering Design** - to be developed

**ENG 2xx (5) Analyzing Our World: Foundations of Engineering Analysis** – to be developed

Possible Resource Books for these two courses include:

- How Things Work Bloomfield
- Technology Education – Learning by Doing Hacker & Berghardt
- The Digital Information Age Frenzel
- Innovators Billington
- Power, Speed, and Form Billington & Billington

**ENG 360.02 (5) History of American Technology.** History of the interaction of American technology and society from colonial times to the present.
ENG 581 Engineering Capstone Collaboration U G (4 credits, repeatable to 8) - to be developed. It is anticipated that students enrolled in this course will contract to collaborate with an existing capstone design team (within any program of the College expressing willingness to collaborate). The students will be expected to bring a disciplinary expertise outside of engineering to the project. This course is to be managed by the Engineering Education Innovation Center.

4. Estimates of Student Interest and Needed Instructional Resources

Although difficult to anticipate, demand for the two minors is initially projected at 50 to 75 students per year for each minor. This would likely necessitate an additional section of the ENG 181, 183 sequence. Enrollment in the two new courses suggested for the core of the Technological Studies minor may be impacted by pending changes in GEC requirements for ASC students and approval of the courses for GEC credit.

As stated below, the Task Force recommends a market analysis involving advisors and current students be done.

5. Recommended Plan for Administration and Development

The Task Force would recommend that these two minors be administratively supported by the Engineering Education Innovation Center (EEIC).

The Task Force identified some issues that need to be addressed to continue proposal development. They include:

- Prerequisites for Department courses which might be used
- Program Buy-in for Capstone
- Engineering’s 100 Level course policy (100 level courses not included in an engineering minor).

6. Recommendations:

1) College continue to develop these two proposals by:
   - Developing draft course outlines for new courses
   - Doing a market analysis through selected advisors and potential students
   - Addressing specific issues identified
   - Continuing to refine the current proposals.

2) Such minors should be developed and managed by the EEIC

Suggestions regarding this proposal are invited and should go to R. J. Gustafson, Associate Dean for Undergraduate Education and Student Services
Appendix 1 Extracted from “Proposed Supplement to “A Model Curriculum Developed by the Special Committee for Undergraduate Curriculum Review in Arts and Sciences and Approved by the Faculty of the Colleges of the Arts and Sciences, June 8, 1988”  12/12/06

TECHNOLOGY

In the broadest sense, technology is the process by which we modify nature and society using knowledge of science and engineering to create new ways to meet our needs and wants [1]. Technology comprises the entire system of people and organizations, knowledge, and processes that go into creating and operating technological devices and systems [2]. An especially important area of knowledge is the design process, of starting with a set of criteria and constraints and working toward a solution – a device, say, or a process – that meets those conditions. Attempts to create new technology provide tests of scientific understanding, and some new technology enables new forms of scientific measurement and theorizing, so that science and technology are mutually reinforcing.

Understanding technology, technological literacy, encompasses three interdependent dimensions – knowledge, ways of thinking and acting, and capabilities [1]. Like literacy in other areas, the goal of courses on technological literacy is to provide people with the tools to participate intelligently and thoughtfully in the world around them. Although the kinds of things a technologically literate person must know can vary from society to society and from era to era, they are consistent with the goals of an educated person as expressed by the Ohio State University General Education model.

GENERAL LEARNING OBJECTIVES

The general learning objectives most relevant to the general education can be expressed within the knowledge and ways of thinking and acting as:

Knowledge

- To recognize the pervasiveness of technology in everyday life.
- To understand basic technological/engineering concepts and terms, such as systems, constraints, and trade-offs.
- To be familiar with the nature and limitations of the design process in a technological system.
- To know some of the ways technology shapes human history and people shape technology.
- To know that all technologies entail risks, some that can be anticipated and some that cannot.
- To appreciate that the development and use of technology involve trade-offs and a balance of costs and benefits.
- To understand that technology reflects the values and culture of society.

Ways of Thinking and Acting
• Asks pertinent questions of self and others regarding the benefits and risks of technologies.
• Seeks information and hands-on skills related to existing and new technologies.
• Participates when appropriate in decisions about the development and use of technology.
• Can apply basic mathematical concepts related to probability, scale, and estimation to make informed judgments about technological risks and benefits.

Specific major programs by their curriculum design may already meet some of these objectives, and therefore may choose to require their students to select among GEC courses that focus on a specific subset of the objectives. It is also reasonable for the GEC to assume that most students possess certain technical skills such as in computer and internet usage, which are a component of technological literacy, but it is essential that all students ultimately need higher level knowledge and skills foundational to being able to make informed judgments about technological risks and benefits.