

*Case Western Reserve University
College of Arts and Sciences*

Report of the Task Force on the Proposed Changes to the General Education Requirements

September 2001

Executive Summary

This report builds on the work conducted by the subcommittees appointed to examine the general education requirement (GER) last spring (see Supplement A for the complete report). The Task Force recommends that the College of Arts and Sciences adopt a GER with 4 distinct parts: the First-Year Seminar, College Seminar Courses, courses that fulfill a Breadth Requirement, and a Senior Capstone Experience. In addition, competency in writing will be established through an evaluation of a writing portfolio representing work collected across 4 courses.

The First-Year Seminar (FYS) provides a common intellectual experience with a strong emphasis on academic skills. It is our aim that participation in the FYS will strengthen reading, writing and communication skills, will provide a foundation for information literacy, ethics and cultural diversity, and will foster meaningful contact among faculty and students. If the preceding goals are met, it is anticipated that an indirect benefit will be increased retention rates and higher levels of student satisfaction. The FYS will replace the English 150 requirement.

Three College Seminar Courses, one from each of three themes, will provide repeated experience in critical reading, writing and oral communication across subsets of disciplines. College Seminar Courses will also provide additional higher-level experiences in information literacy, ethics and cultural diversity. Although these courses will have a limit of 25 students and must fulfill a central set of requirements, the content within each theme will vary. Faculty will be encouraged to adapt existing courses, and to develop new courses, both traditional within discipline/single instructor courses and team-taught or interdisciplinary courses.

The Breadth Requirement as proposed by the original CAS subcommittees, ensures that students are exposed to a wide range of disciplines in addition to their major field of study. Each student will take a minimum of two courses from each of the three major divisions within the college: Natural Sciences and Mathematics, Arts and Humanities, and Social Sciences.

A Senior Capstone Experience will be required of all students, one that follows the flexible guidelines proposed by the original CAS subcommittees. The final product of the experience should demonstrate application of critical thinking skills in the integration and synthesis of knowledge in the student's area of expertise. Effective written and oral presentation will be required.

A writing portfolio will be compiled from final graded writing assignments collected as part of the FYS and the three College Seminar Courses. After each student has completed the last College Seminar Course, the portfolio will be submitted to an appointed committee for evaluation. To graduate, each student must establish writing competency.

We feel that the proposed GER will fulfill our current stated goals as outlined in the General Bulletin, and will provide our undergraduates with more opportunities to write, to give oral presentations, and to interact in small group settings with faculty. Furthermore, the proposed GER will engage undergraduates from the beginning in ethical decision making, in an appreciation of cultural diversity, and in information literacy skills.

This report provides the background and rationale for the proposed changes, details on each part of the proposed GER including a sample FYS syllabus, a recommended timetable and administrative structure, and suggestions for assessment.

Report of the Task Force on the Proposed Changes to the General Education Requirements

I. INTRODUCTION

A. Current Goals for the GER

When we consider our current goals for the GER, it is evident that they already capture many desirable objectives. While we propose only a small change to our stated goals, we propose significant changes to the structure of the GER in order to better meet these goals.

The following paragraph summarizes our goals for an undergraduate education as stated in the current General Bulletin,

"The undergraduate programs provide each student with a liberal education, the cornerstones of which are general education courses and advanced study in one or more major and minor fields. General education courses, while broadening students' knowledge of their cultural past, social world, and natural environment, offer instruction in critical reading and thinking, in writing and oral presentation, and in quantitative reasoning. They also ground the student in experimental and theoretical approaches to the understanding of human culture and behavior, scientific knowledge, and methods of research."

B. Revised Goals for the GER

We propose the addition of three elements (additions in the underlined boldface italics):

"The undergraduate programs provide each student with a liberal education, the cornerstones of which are general education courses and advanced study in one or more major and minor fields. General education courses, while broadening students' knowledge of and strengthening an appreciation of the diversity within their cultural past, social world, and natural environment, offer instruction in critical reading and thinking, in writing and oral presentation, in the use of information, in ethical decisions, and in quantitative reasoning. They also ground the student in experimental and theoretical approaches to the understanding of human culture and behavior, scientific knowledge, and methods of research."

Cultural diversity, information literacy and ethics are of critical importance within every field represented at CWRU (see definitions for cultural diversity, information literacy and ethics beginning on page 18, and in Supplements B, C, and D at the end of this report). However, the topics do not lend themselves to "a single course approach" given that each topic requires a slightly different perspective depending upon the disciplinary context within which it is embedded. The integration of these three topics across the general education curriculum is a logical solution. Each student is thus guaranteed repeated exposure to all three topics from a variety of disciplinary perspectives.

More specifically, we suggest/propose five fundamental goals for the general education requirements:

In fulfillment of the general education requirements, students will receive:

1. Broad knowledge of their cultural past, social world and natural environment with an increased appreciation of the importance of diversity on their cultural past, social world and natural environment
2. Instruction and repeated practice in critical reading and thinking, in writing and oral presentation, and the use of information.
3. Experience in quantitative reasoning and communication about quantitative concepts
4. Experience in the process of ethical decision making across a variety of perspectives and fields
5. Exposure to experimental and theoretical approaches to understanding human culture and behavior, scientific knowledge and methods of research.

II. PROPOSED STRUCTURE FOR THE GENERAL EDUCATION REQUIREMENT

A. Overview

A diagram depicting an overview of the entire proposed GER is shown in Figure 1. Specific details of each of the 4 tiers of the GER are presented below. All entering first-year students would enroll in a 4-credit First-Year Seminar in the fall. College Seminars would be taken in any order after the first semester, one in each of three themes for a total of 9 credits. Students would also be required to take a total of 18 credits, 2 in each of three areas, to fulfill the Breadth requirement. All students would be required to take 3-6 credits of Senior Capstone Experience during their 4th year. Finally, a Writing Portfolio will be created for each student starting in the First-Year Seminar and will consist of papers written as part of the FYS and each of the College Seminars. The proposed GER would consist of a total of 34-37 credit hours as compared to the current requirement which requires 39 credits hours. Each of the 4 tiers of the proposed GER and the Writing Portfolio will be detailed in the following section.

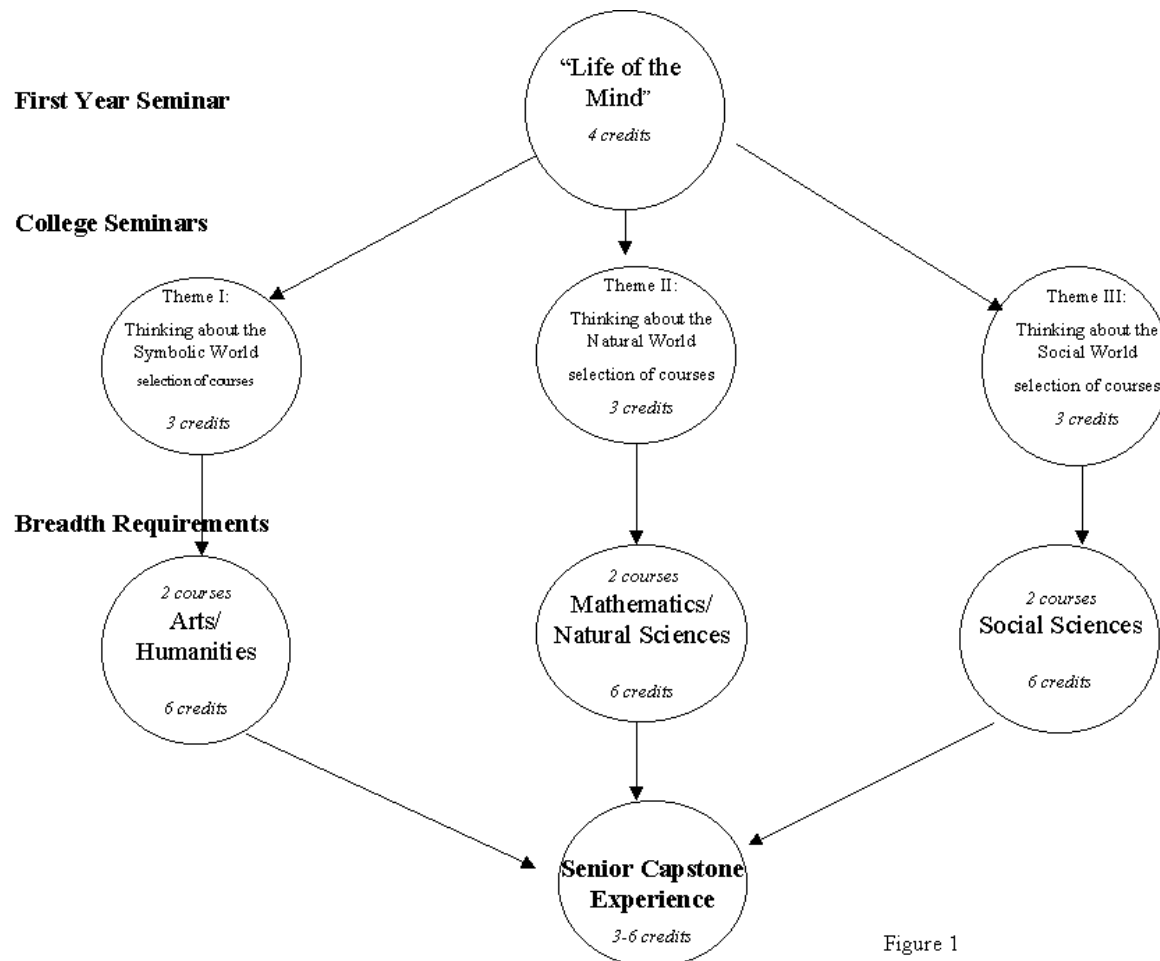


Figure 1
Overview of the GER

B. First-Year Seminar (FYS)

The FYS will be a new intellectual experience for all students, characterized by intense, but open-ended, intellectual inquiry obtained by reading from primary sources, written and oral communication in small groups led by a faculty member. The FYS must be taken during the fall semester of the first year.

1. Goals:

1. Enhance basic intellectual skills of academic inquiry: critical reading, quantitative and qualitative analysis, written and oral communication
2. Provide a supportive intellectually based common experience
3. Introduce basic information literacy skills
4. Provide a foundation for ethical decision making.
5. Encourage a global, multidisciplinary perspective on the learning process
6. Facilitate faculty/student interaction

2. Structure:

1. FYS seminars will consist of no more than 15-20 students, each group will be from the same dorm and will be taught by a member of the current or emeriti faculty.
2. All FYS groups will use a common syllabus. Initially, all groups will read the same book and engage in the same activities. As the semester proceeds, each group will be allowed more autonomy in choosing from a selection of readings and activities, but all graded course

requirements will fulfill the same goals and should be equivalent in terms of time/effort/skills involved.

3. The FYS faculty member will be actively involved in the advising process for her/his FYS group
4. FYS groups will meet in a variety of locations including nearby University Circle institutions (Cleveland Museum of Art, Natural History Museum, Western Reserve Historical Society, etc...). In the future, FYS groups will also meet in residence halls.
5. Although all FYS seminars will not meet on the same days and times, clusters of groups should be scheduled on the same days and times to facilitate interaction among groups during certain segments of the semester.
6. At several times throughout the semester large group events will be planned for all FYS small groups with invited speakers, films, performances, faculty/student panels, etc...
7. FYS will require a significant amount, 18-20 pages of final writing, and will provide writing instruction. FYS instructors will each be assisted by a writing instructor from the English Department. The FYS will therefore replace the English 150 requirement.
8. Some FYS experiences will be developed for the FYS and provided to the FYS instructors. For example, an introductory module on Information Literacy (see section x in the supplemental materials contained in the colored pages at the end of the report for definition and description) will be provided by Bill Claspy from Kelvin Smith Library. A similar introductory module on Ethics is planned. Each FYS instructor may schedule these modules at their own discretion during the semester.

An example of a FYS syllabus is included on pages 13-17 of the report.

C. College Seminars

The College Seminars will build on the foundation established in the FYS. While the FYS introduces students to basic academic inquiry skills, the College Seminars provide the opportunity for continued practice and refinement of these skills. Although the College Seminars will be taught at a relatively general level, and there will be no prerequisites, we envision the seminars to be challenging, thought provoking, and above all, they will allow students to compare and contrast how faculty across different disciplines go about asking questions and solving problems.

1. Goals:

1. Continued use of basic academic inquiry skills introduced in the FYS: critical reading, quantitative and qualitative analysis, written and oral communication with ample opportunity for revision
2. Provide experience in integration and synthesis of theories, information, and methods of inquiry across subsets of disciplines
3. Continued experiences addressing issues in the evaluation and use of information, in ethical decision making and in appreciation of the importance of cultural diversity
4. Provide additional close faculty/student interaction through small class sizes in a seminar format

2. Structure:

1. Three distinct themes allow the major divisions within the college to fall into at least one of the themes; but, a course from any department can be nominated for any of the themes.
 - a. Thinking about the Symbolic World
 - b. Thinking about the Natural World
 - c. Thinking about the Social World
2. Each student must take a College Seminar Course fulfilling each theme for a total of 3 courses or 9 credits
3. Each College Seminar will need to fit into a theme. How a specific course fits a theme will be flexible. Some existing courses will be adapted. Some new single instructor courses will be developed. Some team-taught or interdisciplinary courses will be developed. We hope that funds will be available to act

as an initiative for new courses to be developed. We recommend that when funds are given to develop a new course, that the instructor(s) should be required to offer the course a minimum of 3 times. Each course will have the following requirements:

- a. must not be a required part of a major
- b. must not have any prerequisites
- c. typically, College Seminars will have 25 students per class
- d. must address some aspect of 4 out of the 5 GER goals stated on page 5 of this proposal
- e. must require a significant amount of written and oral communication. At least one paper from each College Seminar will be contributed to the student's Writing Portfolio

D. Breadth Requirements

(Note: The description of the Breadth Requirements in this proposal is essentially the same as that presented by the CEP subcommittees in the January 2001 proposal, Supplement A. At this point, the Task Force finds no compelling reasons for revision.)

To ensure that the CWRU undergraduate has broad exposure to a wide range of disciplines in addition to the concentrated study supplied by the fulfillment of a major requirement, the GER will include a minimum of two courses (6 credits) from each of the three major divisions within the college: Natural Sciences and Mathematics, Arts and Humanities, and Social Sciences. A student's major will satisfy the distribution requirement in the area of the major. The student is free to select any set of two courses within each division for which the prerequisites are met. Departments will no longer be required to submit for approval courses that satisfy the GER requirement.

E. Senior Capstone Experience

(Note: The description of the Senior Capstone Experience in this proposal is taken directly from the proposal presented by the CEP subcommittees in the January 2001 proposal, Supplement A.)

The Senior Capstone Experience or Senior Project is required of all students across the College of Arts and Sciences in their senior year and will consist of one or two semesters of work, 3-6 credit hours. The student will be required to pull together the knowledge and skills obtained throughout their education to address the demands of a new and original project. Acceptable formats for the senior project are varied and flexible, but each must satisfy the following requirements:

- critical thinking
- focus on methodology, with clear goals, an appropriate plan of action, and a good likelihood of success
- regular oversight by the project advisor
- periodic (twice per semester?) reporting of progress
- writing throughout the project (drafts, progress reports) with a final thesis in prose format, although the project may also include different media
- oral reports throughout the project and a final public presentation of the student's work in a campus-wide open house research day or conference

A committee will be formed to oversee the Senior Capstone Experience program and will be responsible for approval of all courses that satisfy the Senior Capstone requirement and will organize the Senior Fair at the end of the year for public presentation of finished projects. Grades will be assigned by the official faculty advisor or by the course instructor.

Senior Projects might take one of the following forms:

- One of a set of special Arts and Science courses designated as Senior Project courses. These will be interdisciplinary and will be organized around several broad topics., some of which could be specific to the CWRU community or to the City of Cleveland. These topics must have a broad enough range to be investigated from many different disciplines. During the fall semester, each student within the research group will investigate the group's broad topic from the perspective of his or her major area of interest. They will be advised in their research by the professor of the interdisciplinary class and with an advisor within their discipline.
- Existing or new department-based Senior Project courses.
- Individual (or small group) projects arranged with a faculty member in the College of Arts and Sciences. Such projects may be proposed by the faculty or by the students.
- Projects based primarily on work with a professional outside the college or university, but supervised by a college faculty member.

F. Writing Portfolio

Competency in writing must be established in order to graduate. Writing competency will be evaluated through the use of a writing portfolio. Each student will contribute all original, graded papers from the FYS and will continue to contribute additional graded papers from the College Seminar courses. After completion of the third College Seminar Course, typically at the end of the second year, the portfolio will be submitted for evaluation to an appointed panel (panel members would most likely be from the English Department). The panel will read and evaluate the portfolio at a C-level for an upper-level student. If a portfolio does not establish competency, then the student will be required to take a 1-credit hour course, English 180. Students will be required to revise previous work and complete additional writing assignments with the supervision of a tutor. Successful completion of the 1-credit course will demonstrate writing competency. If the FYS instructor and/or the FYS writing instructor assigned from the English department determine a student's writing is below a C level, the student will be required to begin the writing tutorial process prior to the completion of the College Seminar Courses. If a student is identified as "at risk" prior to the beginning of the FYS, they will be placed in English 148 during the summer.

G. Transfer Students

Transfer students will not be required to take the FYS but must take all 3 College Seminar courses and must demonstrate writing competency. Transfer credit will not be allowed for any of the College Seminar courses.

III. ASSESSMENT

It is critically important for the university to understand and document the impact of the proposed changes in the GER. Assessments must be planned and begun prior to the implementation of any changes, during all pilot phases of the new GER, and for several years after the new GER is in place. Assessment information will be used to determine how well the GER has met its stated goals.

A. Student Outcomes

If the GER is successful, then positive changes should occur in both student performance and attitudes. We propose the following measures:

1. Collecting baseline demographic information and standardized test scores
2. Documenting changes in writing with the writing portfolio and with a baseline writing sample completed prior to the first semester, through the FYS and throughout the College Seminars.
3. Gathering information on retention
4. Surveying students at several points: after completing the FYS, after each of the College Seminars, and after completing the Senior Capstone Experience. The surveys will ask self-report questions on their own behavior (class attendance, participation in activities, social life), their perceptions of their academic skills, their attitudes about the university in terms of the quality of the education they are receiving, and more. Surveys have already been developed for the same type of assessment by other institutions, for example the Policy Center on the First Year of College, and it may be possible to use a survey that has already been pilot tested. Students who do not participate in the pilot phase of the new GER will also fill out the survey at the same time points as students involved in the pilot program.

B. Faculty Outcomes

Other universities have reported positive outcomes among faculty involved in FYS and other changes to their GER. All faculty should be surveyed prior to the implementation of any changes in the GER, during the pilot phase, and after full implementation. The survey should assess faculty perceptions of how the GER impact on students and themselves as well as their general perception of the university in terms of the teaching and research environment.

IV. TIMETABLE

Fall 2001 – The proposed changes to the GER will be distributed to the faculty of the College of Arts and Sciences and to key representatives in engineering, nursing and management. A logistic/financial analysis of the impact of these proposals will be undertaken and needs for additional faculty, classrooms, and financial resources will be assessed. Planning to meet identified needs will be undertaken. Two faculty forums will be held and any recommended changes will be made to the proposal. A final proposal will be distributed. A vote will be taken within the College of Arts and Sciences.

Spring 2002 – If the proposal is accepted, an administrative structure will be put in place and a pilot program will be planned. FYS faculty will be selected and training will begin.

Summer 2002 – Students will be recruited for the pilot phase. We feel that the full impact of the FYS will not be adequately assessed without a critical number of FYS groups. Approximately 10 FYS sections will form the pilot program group with all other students forming the comparison group. Faculty training will continue. Initiatives for the development of College Seminar classes will involve summer salary and the first College Seminar Courses will need to be in place for the pilot group by Spring 2003. Departments will be asked to submit guidelines for their Senior Capstone Experiences.

Fall 2002 - Piloting of the FYS will begin.

Spring 2003 – Piloting of the first College Seminar Courses will begin. Assessment data from the FYS pilot will be analyzed and a decision made to either discontinue the FYS, continue piloting the FYS, or put the FYS into place for all incoming students.

Summer 2003– Continued development of College Seminar Courses.

V. ADMINISTRATIVE STRUCTURE

The proposed changes to the GER will require a great deal of planning and coordination among different groups of faculty. A new administrative position of GER Coordinator is required to facilitate the implementation of the changes and to continue overseeing the program as it becomes permanent. This position should be staffed by an appointed senior faculty member and will probably be a full time position initially and may revert to half-time after the first year. Three small faculty committees with rotating appointments of 2-3 years should be formed to oversee each part of the GER: the FYS, the College Seminar Courses, and the Senior Capstone Experience.

Examples of key responsibilities include:

Coordinator-

- implementation of the pilot program and assessment process
- oversees training of all FYS faculty

Committees

FYS

- design final FYS syllabus for use in the pilot sections
- continual appraisal and revision to the syllabus to keep it fresh and engaging

College Seminar Courses

- develop frameworks to guide faculty in generating courses
- approval of nominated courses

Senior Capstone Experience

- approval of departmental requirements
- organization of the senior fair

VI. INVOLVEMENT OF THE ENTIRE UNIVERSITY

The members of the Task Force would like to encourage the College of Arts and Sciences to extend a formal invitation to the School of Engineering, the School of Nursing and the School of Management to participate in all or part of the proposed GER. This invitation can include involvement in the pilot phase. We feel that the FYS experience will be strengthened if every first year student in the university participates. Furthermore, the impact of the College Seminar Courses and the Breadth Requirement courses will be stronger if faculty and students from each of the schools are intimately involved.

VII. BACKGROUND INFORMATION

A. History

The Committee on Educational Programs (CEP) of the College of Arts and Sciences established two subcommittees in Fall 1999 with these objectives: (1) to provide a comprehensive review of the current GER, and (2) to broadly consider Communication and Critical Thinking, Senior Projects, and Freshman Seminars (see Appendix A for membership of the CEP and GER subcommittees and the January 2001 report issued by the CEP on the proposed changes developed by the subcommittees). In December 2000 the subcommittees presented their reports and recommendations to the CEP, and the CEP presented a report to the faculty in January 2001. The following changes to the college's General Education Requirements were proposed (excerpted from the report, pp. 1-2):

1. A four-semester sequence of interdisciplinary core courses to be taken during the freshman and sophomore years. A common freshman seminar to be taken in the first semester will constitute one of the core courses, with the other three courses taken in any order over the subsequent three semesters.
2. The first semester core course will be a four-credit-hour course which will include a "writing laboratory." As such, this core course will replace the current English 150 requirement.
3. A distribution requirement of a minimum of any two courses in each of the three disciplinary categories within the college: Natural Sciences and Mathematics, Arts and Humanities, and Social Sciences. (A student's major automatically satisfies his or her distribution requirement in the area of that major. In the remaining areas the student may take any courses for which he or she meets the prerequisites.)
4. Completion of a Senior Capstone experience.

General feedback from the faculty of the College of Arts and sciences suggested that additional details were required before the proposed changes could be evaluated adequately. Dean Savin appointed a Task Force to provide additional details to the changes in the GER proposed by the CEP.

Task Force Membership:

Tim Beal, Religion
David Singer, Mathematics
Mano Singham, Physics
Gary Stonum, English
Lee Thompson (chair), Psychology

The Task Force met through summer 2001 to continue the work of the subcommittees by providing additional details for each piece of the proposed revision to the GER. The current report will:

- Revisit the rationale and general goals of the GER
- Provide a detailed description of the proposed revision to the GER
- Outline potential assessment strategies
- Suggest a timetable for implementation of the changes
- Recommend an administrative structure
- Describe the potential involvement of the entire university
- Include an appendix with additional information and documents

B. Research on Peer Institutions

As we consider change within our own institution, it may be helpful to also consider changes taking place at peer institutions and to recognize that most of them are also giving renewed attention to undergraduate education. To identify the institutions in our peer group we turn to a classification system established in 1994 by the Carnegie Foundation for the Advancement of Teaching. The system classifies over 3,500 institutions of higher education and identifies 88 as “Research I” universities which

“offer a full range of baccalaureate programs, are committed to graduate education through the doctorate, and give high priority to research. They award 50 or more doctoral degrees each year. In addition, they receive annually \$40-million or more in federal support.”

Thirty-seven institutions are designated as “Research II”, identical in all ways to the “Research I” universities except that they receive between \$15.5-million and \$40-million in federal support.

In response to the 1998 Boyer Report, “Reinventing Undergraduate Education: A Blueprint for America’s Research Universities”, the Reinvention Center at the University of Stony Brook was established to foster innovation and change in the way that research and doctoral universities conceptualize and deliver undergraduate education. Over the past 2 years, the reinvention center has invited all Research I and II universities to participate in a regional network of meetings designed to identify current practices and concerns with respect to undergraduate education. Over 70% of the universities have participated in some way. These regional networks have provided useful data and also facilitate the sharing of information and resources. Representatives from CWRU have participated in two regional networks meetings, midwestern and northeast, which included representatives from University of Rochester, New York University, Pennsylvania State University, Rutgers University, Northwestern, Syracuse University, Cornell

University, and others. Dr. Wendy Katkin, director of the Reinvention Center, reports in the minutes of the Northeast Regional Network meeting on June 8th, 2001 the following top 5 common concerns among participating institutions:

1. Re-thinking general education so that it provides students with foundations for their further studies
2. Enriching the first-year experience
3. Opening up the curriculum to allow for truly interdisciplinary study
4. Expanding opportunities for student research and creative activity
5. Fostering the development of good written and oral communication skills

In a survey conducted by the Reinvention Center of 90 Research I and II institutions, the most attention has been paid to:

1. Increasing research/creative activities as a central part of undergraduate education
2. Development of a first-year experience with an emphasis on active learning and critical skills
3. Revision of general education
4. Improvement of writing skills

The survey also concludes that to date, most efforts have only involved highly selected students and although many aspire to include the entire student body, few if any have accomplished this goal. About 80% of the responding universities have some type of first year experience in place, but none of them include the entire first year class, with more than half involving less than 50%.

VIII. Supporting Materials

A. Syllabus for the First Year Seminar

"Life of the Mind"

Overview:

The purpose of this outline is to provide an example of a potential First Year Seminar (FYS). The outline is not intended to be a final course plan. In general, the first segments of the course structure will be well defined with all FYS groups following the same plan. As the semester continues, however, each FYS instructor/group will be given more autonomy to take the course in a desired direction. Online modules on Information Literacy and Ethics will be provided and all instructors will be required to incorporate these modules into their courses but the timing will be flexible. Instructors will be provided with a great deal of optional resource material to use at their discretion. For example, suggestions for class exercises, homework assignments and class field trips will be provided for each section of the course. Although the FYS groups may differ slightly in content as they pursue different tangents of the course, the amount and nature of the final graded writing assignments will be constant across all sections. The goal for this structure is to provide a common experience for all first year students while

allowing flexibility for the instructors to exercise creativity relative to their particular areas of expertise.

All first-year students during the fall semester will be assigned to a FYS group of 15-20 students, chosen as much as is practicable from the same or adjacent residence hall with an effort to include a diverse group of students within each group (ethnicity, field of study, geography, gender). Commuter students will also be integrated into such groups in sets of 3 or more. Subsets of groups will be formed with a common meeting time so that several groups can occasionally interact and meet together. Groups will rotate through different designated FYS classrooms located at various institutions around University Circle (CWRU, Museum of Art, Western Reserve Historical Society, Natural History Museum, etc...) so that each group will become familiar with at least two different neighboring institutions outside of CWRU. The first time the group meets in a new classroom, part or all of that class will be spent learning about the host institution.

For each section of the course, a large group event will be held. All of the FYS groups will attend simultaneously. Throughout the semester a series of films and perhaps dramatic performances relevant for the books/topics included in the FYS will be scheduled (all FYS students can attend free of charge). If appropriate events are scheduled at other institutions in the community, these events may also be incorporated into the course.

Textbooks:

1. Troyka, Lynn. Quick Access: A reference for writers, 3rd Ed. Upper Saddle River, NJ: Prentice Hall, 2001.
2. Sacks, Oliver. An Anthropologist on Mars: Seven Paradoxical Tales. New York: Random House, 1996.
3. Anthology - To be created from journal articles, newspaper articles, excerpts from longer works all on topics/themes related to the Sack's book. Some of the readings will address ethical issues and some will incorporate quantitative reasoning into the related topics. CWRU faculty members from different academic fields may be called upon to recommend appropriate articles.
4. Biography – Selected from a list provided to the instructor of each FYS (see some examples at the end of this document).

Requirements:

1. The FYS will be a 4-credit-hour graded course.
2. Attendance/participation in regular class sessions and plenary events will be required.
3. Approximately 18-20 pages of final writing divided into assignments across the sections of the course. All final graded writing assignments from the FYS will become part of a Writing Portfolio.
4. Additional homework assignments will be made including completion of online Information Literacy and Ethics modules.

Schedule

Before the first day of classes:

- 1) Read An Anthropologist on Mars.
- 2) Answer 3 short essay questions related to the book. The essays will be turned in the first day of class.

Two example questions:

“Will scientists someday fully understand the human mind by studying how the brain works? Support your answer with examples from An Anthropologist on Mars.”

“Create a definition for the word abnormal and then provide support for and challenges to your definition from An Anthropologist on Mars.”

Part I - How the Mind Works

Week 1:

1. Introduction to the host institution and to each other
2. Class discussions centered around the essay question topics.
3. A brief writing assignment will be made.

For example: “Have your thoughts changed (on the essay questions)? If so, describe how they have changed and why. If not, provide additional support for your viewpoint.”

Weeks 2 – 5:

1. Each class will identify a set of 3-5 themes stemming from the Sack’s book. Course will use the anthology to extend topics/themes begun with the Sack’s book. At each instructor’s discretion, the entire FYS group may read selected parts of the anthology simultaneously, or small groups can be formed with each group reading a different selection, or small groups can be formed with each group member reading a different selection.
2. A writing assignment with peer review of first drafts will be made. Papers will focus on one of the themes identified by the class and will compare and contrast information from at least two of the anthology readings and the Sack’s book.
3. At least one film and a large group event centered around a guest speaker will occur during the first 3 –4 weeks of the semester.

Part II - How an Inspiring Mind Works

Weeks 6-10

1. Each seminar group or instructor will select a biographical or autobiographical work in order to explore a particular individual’s “life of the mind.” The list of recommended works (see suggestions below) will reflect diversity on all the following axes: ethnicity, gender, academic field, socio-economic level, and geography.
2. Each member of the group will conduct research on an aspect of the biography that will help the class understand the context within which the person lived their life. The research will be shared with the class.
3. A set of questions applicable to every biography on the list will be used to guide the discussion in each group. At least one of the questions will revolve around ethics. These questions will be used as the foundation for a writing assignment
4. Each seminar group will prepare a presentation to share with another seminar group on the biography. Pairs of seminar groups that meet in the same time slot and have chosen different biographies will meet together for one class.
5. A selection of biographical films will be shown throughout the middle 5 weeks of the semester and students will be required to see at least one.

Part III - How Minds Work Together

Weeks 11-15 - The emphasis in this section is on the importance of minds working together to create knowledge. This is the essence of a research university. Individuals can literally work together or one person can learn from the past advances and mistakes of others.

1. Each student will choose an area of ongoing research at CWRU in which they have an interest (A list of areas and available faculty will be provided to each FYS group. Several students will choose the same faculty member. Effort will be made to assemble a group of participating faculty from a wide range of disciplines across the entire campus including the professional schools).
2. Each student will read a paper written by the faculty member or selected by the faculty member and summarize the main points of the paper in writing (Again a list of papers will be provided to coincide with the list of faculty members agreeing to participate in this program.)
3. Each student will design a set of interview questions and will participate in a group interview with the faculty member and other FYS students. The interview questions should identify key research areas of interest to the faculty member and learn what approaches are used (learn about the process of conducting research not just factual information) as well as the specific ethical issues involved. The interview can also address the background and career path of the faculty member.
4. Each FYS group will create a publication with articles on the faculty member they interviewed to be shared with the group and with the rest of the university online.
5. A large group event will take place. The president of the university will share her/his view of a research university along with a panel of faculty.

Examples of biographies (the subject is in bold type; asterisked titles seem particularly appropriate)

***Augustine**, *Confessions*

* Susan Quinn, *Marie Curie: A Life* (Perseus, 1996)

* **Sayantani DasGupta**, *Her Own Medicine: A Woman's Journey from Student to Doctor* (Ballantine, 1999)

* Michael Paterniti, *Driving Mr. Albert: A Trip across America with **Einstein's** Brain* (Dell, 2001) [also about **Thomas Harvey**, who did Einstein's autopsy]

* Dava Sobel, *Galileo's Daughter: A Historical Memoir of Science, Faith, and Love* (Penguin, 2000)

* **Temple Grandin** and Oliver W. Sacks, *Thinking in Pictures: And Other Reports from My Life with Autism* (Vintage, 1996)

*Constance Reid, *Hilbert* (Copernicus, 1996) [about mathematician **David Hilbert**]

* Evelyn Fox Keller, *A Feeling for the Organism: The Life and Work of **Barbara McClintock*** (W.H. Freeman & Co., 1993)

* Sylvia Nasar, *A Beautiful Mind: A Biography of **John Forbes Nash, Jr.**, Winner of the Nobel Prize in Economics, 1994* (Touchstone, 1999)

* **Friedrich Nietzsche**, *Ecce Homo: How One Becomes What One Is*

* **Claudia L. Osborn**, *Over My Head: A Doctor's Own Story of Head Injury from the Inside Looking Out* (Andrews McMeel, 2000)

* **Edward W. Said**, *Out of Place: A Memoir* (Vintage, 2000)

* Thomas Maier, *Dr. Spock: An American Life* (Harcourt Brace, 1998)

* Cone, James H. *Martin and Malcolm and America: A Dream or a Nightmare?* (Orbis, 1992) [**Malcolm X and Martin Luther King**]

Hannah Arendt and Heinrich Blucher, *Within Four Walls: The Correspondence of Hannah Arendt and Heinrich Blucher, 1936-68* (Harcourt Brace, 2000)

Nigel Barley, *An Innocent Anthropologist: Notes from a Mud Hut* (Waveland, 2000) [This is short and might be supplemented with another, like Malinowski's journals.]

Rene Descartes, *Discourse on Method*

Bethge Eberhard, *Dietrich Bonhoeffer: A Biography* (Fortress, 2000)

Charles Darwin and Nora Barlow (ed.), *The Autobiography of Charles Darwin* (Norton, 1993)

Pat Shipman, *The Man Who Found the Missing Link: Eugene Dubois and His Lifelong Quest to Prove Darwin Right* (Simon & Schuster, 2001)

David MacEy, *Frantz Fanon: A Biography* (Picador, 2001) [perhaps supplemented with Frantz Fanon's *Black Skin, White Masks*]

Richard P. Feynman and Edward Hutchings (ed.), "Surely You're Joking, Mr. Feynman!" *Adventures of a Curious Character* (Norton 1997)

Erik Erikson, *Young Man Luther: A Study in Psychoanalysis and History* (Norton, 1993 repr.)

Thomas Merton, *Seven Storey Mountain* (Harvest, 1999 repr.)

Franco Modigliani, *Adventures of an Economist* (forthcoming August 2001)

Jean-Jacques Rousseau, *Confessions*

Bertrand Russell, *Autobiography of Bertrand Russell* (Routledge, 2000)

The Trial and Death of Socrates (selections from relevant dialogues)

Andrew Hodges, *Alan Turing: The Enigma* (Walker & Co., 2000)

Roy Richard Grinker, *In the Arms of Africa: The Life of Colin M. Turnbull* (St. Martins, 2000)

Francis Du Plessix Gray, *Simone Weil* (Viking, 2001)

Elga Wasserman, *The Door and the Dream: Conversations with Eminent Women in Science* (Joseph Henry, 2000)

Jonathan Kozol, *Amazing Grace: The Lives of Children and the Conscience of a Nation* (Harper, 1996)

B. Definitions for Information Literacy, Ethics, and Cultural Diversity

The proposed revision to the GER emphasizes three areas to be integrated into the First-Year Seminar and the College Seminar Courses: Information Literacy, Ethics, and Cultural Diversity. The following definitions are used for each of these terms.

1. Information Literacy -

In 1989, the Association of College and Research Libraries (ACRL) defined information literacy as mastery of skills which enable students to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information."¹ More recently the ACRL (2001) has outlined the following information literacy competency standards for higher education²:

"An information literate individual is able to:

- Determine the extent of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into one's knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally"

¹ *American Library Association. Presidential Committee on Information Literacy. Final Report.* (Chicago: American Library Association, 1989.) <http://www.ala.org/acrl/nili/ilit1st.html> (9/10/01)

² *Information literacy competency standards for higher education.* 2000. <http://www.ala.org/acrl/ilcomstand.html> (9/10/01)

Also see supplemental section B for further discussion on the importance of information literacy.

2. Ethics -

The final report of the CAS CSE ethics advisory committee provides a wealth of information including online resources as it recommends ways to increase awareness of ethics at CWRU (see Supplement C for a copy of the full report). In general, the report urges the university to integrate instruction in ethics across the curriculum using active learning approaches. Given a broad definition of the term "ethics" as, "standards for ethical or moral behavior of a particular group," each student must be exposed to the appropriate standards for each group to which they belong. A progression of experiences beginning with the first year student is recommended and the experiences would encompass personal, practical and professional ethics as appropriate.

3. Cultural Diversity -

This document uses the term "cultural diversity" in its broadest sense. Berry, Poortinga, Segall, and Dasen (1992) list the following contexts in which the term "culture" is used:

1. Descriptive - activities or behaviors

2. Historical - heritage and tradition
3. Normative - laws and norms
4. Psychological - approaches to learning, problem solving and thought
5. Structural - societal or organizational characteristics
6. Genetic - biological origins

The authors go on to describe different aspects of life touched by culture. Including:

1. food and clothing
2. housing and technology
3. economy and transportation
4. individual and family activities
5. community and government
6. welfare, religion, and science
7. sex and the life cycle

We use the term "cultural diversity" to represent differences among individuals and the specific groups to which they belong, in any of the areas listed above. Interestingly, a critical analysis of the differences between two cultural groups will invariably contain information about similarities between groups.

In the current GER, we have a Global and Cultural Diversity 3-credit hour requirement. Students choose a course from a wide selection of varied courses across many departments "designed to develop students' awareness of their cultural assumptions and to expand their understanding of cultural issues,..." We support the goal of helping students become aware of their own perspectives and the foundation upon which their perspectives are built, but we recommend a wider range of experiences to fulfill this goal with an emphasis on inquiry skills.

The university environment for many students is their first exposure to others from diverse cultural backgrounds. Ideally, increased cultural diversity among the students and faculty that make up the university community should enhance learning. However, as pointed out by Richard Light in his book *Making the Most of College*, increased contact with diverse individuals does not automatically translate into enhanced learning and may actually backfire (see excerpts from Light's book in Supplement D) unless the university administration, faculty and curriculum take an active role in promoting diversity. As CWRU strives to maintain and increase cultural diversity, we should capitalize on what others have discovered to be effective methods for increasing the positive benefits of living and learning within a culturally diverse community. The long term benefits of this effort are obvious for our graduates as they set out on their career paths.

While social experiences outside of the classroom can play an important role in shaping students attitudes, classroom experiences can be influential as well. Two broad categories of courses have been used as vehicles for promoting learning through cultural diversity: 1) Courses which primarily expose students to information typically underrepresented in the university curriculum, and 2) Courses which apply critical analysis to different perspectives and the ability to take diversity into account when analyzing problems. Both types of courses can be effective and our roster of College Seminar Courses should contain courses which fit either or both categories.

Explicit exposure to and engagement with materials related to issues of cultural diversity will broaden students perspective of the world, and exercise their critical analysis skills. Ideally these outcomes will not only enhance future learning in the classroom and in the workplace, but will also have a positive impact on social interactions on and off campus.

Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (1992). Cross-cultural psychology: Research and applications. New York: Cambridge University Press.

IX. Supplements

- A. Committee on Educational Programs Report, January 2001
- B. Overall Goals of University Library Information Literacy Program
- C. Report of the Deans' Ethics Advisory Committee on Undergraduate Education in Practical and Professional Ethics
- D. Highlights and excerpts from the book, Making the Most of College

Supplement A

Case Western Reserve University
College of Arts and Sciences
Committee on Educational Programs

Proposed Changes to the General Education Requirements January 2001

PART 1 OVERVIEW OF PROPOSED CHANGES AND RATIONALE

INTRODUCTION

The Committee on Educational Programs (CEP) of the College of Arts and Sciences proposed in 1997 that a comprehensive review of the General Education Requirements (GER) be undertaken after the requirements had been in effect for four academic years. That same year the faculty of the college passed a resolution charging departments with developing curricula stressing skills in communication and critical thinking. The dean was instructed to review the success of this undertaking with the CEP in Spring 2000. Therefore, in response to these two initiatives, two subcommittees of the CEP were established in Fall 1999 to undertake two tasks: (1) a comprehensive review of the current GER, and (2) to broadly consider Communication and Critical Thinking, Senior Projects, and Freshman Seminars. (See Appendix 2 for membership of CEP and GER subcommittees).

The subcommittees met during AY 1999-2000 and Fall 2000. The members were instructed by Interim Dean Savin in Fall 2000 to conduct their inquiries without considering the availability of institutional resources. The subcommittees were, therefore, asked to propose curricular changes based on their perceived academic and pedagogical value, independent of any assessment of the resources required to implement the programs.

In December 2000 the subcommittees presented their reports and recommendations to the CEP. In this document, the recommendations of the two subcommittees have been merged and together are referred to as the GER. After considering the subcommittees' recommendations, the CEP proposes the following changes to the college's General Education Requirements.

OVERVIEW

The CEP proposes that the GER be restructured in order to provide a more solid foundation for undergraduate education. The revised GER includes the following elements (each is described in detail below):

1. A four-semester sequence of interdisciplinary core courses to be taken during the freshman and sophomore years. A common freshman seminar to be taken in the first semester will constitute one of the core courses, with the other three courses taken in any order over the subsequent three semesters.
2. The first semester core course will be a four-credit-hour course which will include a "writing laboratory." As such this core course will replace the current English 150 requirement.

3. A distribution requirement of a minimum of any two courses in each of the three disciplinary categories within the college: Natural Sciences and Mathematics, Arts and Humanities, and Social Sciences.
4. Completion of a Senior Capstone experience.

RATIONALE

The College of Arts and Sciences describes its goals for undergraduate education as follows:

“The undergraduate programs provide each student with a liberal education, the cornerstones of which are general education courses and advanced study in one or more major and minor fields. General education courses, while broadening students’ knowledge of their cultural past, social world, and natural environment, offer instruction in critical reading and thinking, in writing and oral presentation, and in quantitative reasoning. They also ground the student in experimental and theoretical approaches to the understanding of human culture and behavior, scientific knowledge, and methods of research.” [CWRU General Bulletin 2000-2002, p. 200]

While recognizing that the strength of the current GER is in providing students with diverse experiences in core areas of faculty expertise, the CEP believes that the proposed changes in the GER move us closer to achieving these goals.

GENERAL EDUCATION REQUIREMENTS IN THE NEW MILLENNIUM:

In considering how to restructure the GER, the CEP implicitly adopted the following principles:

- Knowledge is not compartmentalized along traditional academic departmental boundaries.
- The GER must create bridges across the components of the Arts and Sciences.
- A common educational experience, provided early in a student’s academic career, instills intellectual attitudes and habits and improves student life on campus.
- Improved student life contributes to positive academic and educational outcomes.
- The freshman year is the critical time to launch students as scholars and members of a university community.

In adopting these principles, the CEP is in step with proposed reforms made by the Boyer Commission on Educating Undergraduates in the Research University. The Boyer Commission released a report in 1998 calling for dramatic changes in undergraduate education at the country’s research universities. The Boyer Commission’s vision of undergraduate education is one in which the students become participants in a “shared mission” of learning. The commission contends that “[t]he skills of analysis, evaluation, and synthesis will become the hallmarks of a good education...” (“The university as an ecosystem,” p.2). To accomplish this mission, the commission makes several suggestions for the composition of undergraduate education:

- A strong general education for undergraduates “that creates a unity with their peers, their professors, and the rest of society” (“The university as an ecosystem,” p.2)
- A focus on interdisciplinary, collaborative scholarship
- A freshman year that “provide[s] new stimulation for intellectual growth and a firm grounding in inquiry-based learning and communication of information and ideas” (II. p. 1)
- A capstone experience that draws together the entire educational experience

By restructuring the GER as proposed, therefore, CWRU's College of Arts and Sciences will step to the forefront of undergraduate education today.

PART 2 DESCRIPTIONS OF PROPOSED CHANGES

INTERDISCIPLINARY CORE SEQUENCE

We propose a four-course sequence of interdisciplinary courses intended to introduce students to the fundamental elements of a liberal arts education. These include an exposure to a broad range of intellectual endeavors and to a breadth of information from which to form logically-based opinions, to solve problems, and to communicate such opinions and solutions in an effective manner.

A common freshman seminar, to be taken in the first semester, will constitute one of the core courses, with the other three courses taken in any order over the subsequent three semesters. A requirement that the first semester be a small seminar of no more than 15 students promotes student-faculty interaction and helps orient students to a university environment that promotes intellectual inquiry and discourse. We recommend that the first-semester seminars be located in the residence halls in order to emphasize and promote the important link between student life and academic success and to help develop a cohesive and collegial environment.

The proposed new “core” serves two important functions. First, the interdisciplinary core courses develop a basic conceptual framework of understanding within each defined area of inquiry, illustrate the scope of interdisciplinary connections bearing on it, and foster inquiry-appropriate communication skills and critical thinking skills. These courses are to be viewed as foundation courses for intellectual inquiry in general rather than discipline-specific inquiry. Therefore, the objective of the common courses is not to develop particular levels of skill or particular databases of knowledge, but rather to lay a *foundation* from which students will be motivated to improve their skills, knowledge, and understanding in a progressive and cumulative way as they proceed through the rest of their education. In this way, we see these core courses as serving an important academic role in providing a solid intellectual foundation for undergraduate education.

Secondly, in addition to contributing to the academic and pedagogical goals of the college, the new core will provide a common educational experience and promote a strong sense of community life on campus. This will be accomplished both by the content and the structure of the core courses. By taking the same course, students will have a shared intellectual and academic experience which will counterbalance the specialization required within majors. The structure of the courses, including the first-semester seminar, fosters the development of a cohesive and collegial environment by requiring a common reading list, by promoting student-faculty interaction, and by encouraging intellectual conversation within a familiar and comfortable small group setting.

INCORPORATION OF ENGLISH 150 REQUIREMENT INTO THE NEW CORE

An important goal of the proposed core is to encourage and foster good writing habits in all students. Students will be required to write extensively in each of the core courses. Recognizing the need to provide focused teaching about writing itself, as is currently done in English 150, the CEP recommends that the first-semester seminar be a four-credit-hour course which includes a “writing laboratory” component. The goal of incorporating the writing requirement into the core course is to provide a cohesive educational experience in which students can both learn and write about ideas and concepts and receive direct training in writing. The writing instruction is likely to benefit from the direct application of the writing exercises to the themes and ideas of the core course.

This core course would replace English 150 as a GER requirement. This presents the additional challenge of meeting the university writing requirement, which is currently met by obtaining a “C” grade in English 150. The CEP recommends that the college consider establishing a system in which students submit a writing portfolio at the end of their first year. This portfolio would be evaluated by a faculty committee. If the writing portfolio passes the evaluation, the student will have passed the university writing requirement. If the portfolio is considered inadequate, the student will submit another portfolio at the end of their second year. If that fails, the student will be required to take English 150 or another course to be determined.

DISTRIBUTION REQUIREMENTS

In addition to the four-course sequence just described, we propose that students be required to take a minimum of two courses (six credits) from each of the three major disciplinary areas within the college: Natural Sciences and Mathematics, Arts and Humanities, and Social Sciences. A student's major will automatically satisfy his or her distribution requirement in the area of that major. In the remaining areas the student may take ANY courses for which he or she meets the prerequisites. There are no pre-designated sequences that must be satisfied to complete the proposed distribution requirement. This latter feature is a distinct departure from the current GER in which departments must "apply" to the CEP for permission for their course to fulfill an area of the GER. In removing this requirement, the CEP is freeing departments from this procedure.

In retaining a distribution requirement, the CEP is expressing its support for the concept that a liberal education consists of broad exposure to a variety of disciplines as well as in-depth study of a single discipline. Distribution requirements assure that this concept is actualized.

SENIOR CAPSTONE EXPERIENCE

The senior project is intended as a capstone experience for students across the College of Arts and Sciences in their senior year. Ideally the senior project should consist of an individual or collaborative, carefully supervised research project. The project should allow students the opportunity for academic creativity and originality and, where appropriate, the use of interdisciplinary approaches in interaction with students from other disciplines on the campus. In the project itself, students should apply their knowledge and experience, acquired throughout their undergraduate years, to a topic from within their own discipline or from an interdisciplinary seminar. By presenting the results of their work in written form (paper) as well as in oral presentations to their peers and then to a wider audience on campus, the senior project will improve students' writing as well as their presentation and communication skills.

- All Arts and Sciences students are required to take one or two semesters, three-six total hours, of "Senior Project" in their senior year. This project is intended as a capstone experience that requires the student to draw together material from a variety of courses taken during his or her college career and extend and apply this background to a new and original project.
- Several possible formats for the Senior Project are described below. Other formats may be suggested by faculty and students, but each senior project must satisfy the following pedagogical guidelines:
 - critical thinking
 - focus on methodology, with clear goals, an appropriate plan of action, and a good likelihood of success
 - regular oversight by the project advisor
 - periodic (twice per semester?) reporting of progress
 - writing throughout the project (drafts, progress reports) with a final thesis in prose format, although the project may also include different media
 - oral reports throughout the project and a final public presentation of the student's work in a campus-wide open house research day or conference
- Senior Projects might take one of the following forms:
 - One of a set of special Arts and Sciences courses designated as Senior Project courses. These will be interdisciplinary and will be organized around several broad topics, some of which could be specific to the CWRU community or to the City of Cleveland. These topics must have a broad enough range to be investigated from many different disciplines. During the fall semester, each student within the research group will investigate the group's broad topic from the perspective of his or her major area of interest. They will be advised in their research by the professor of the interdisciplinary class and with an

advisor within their discipline.

- Existing or new department-based Senior Project courses.
- Individual (or small group) projects arranged with a faculty member in the College of Arts and Sciences. Such projects may be proposed by the faculty or by the students.
- Projects based primarily on work with a professional outside the college or university, but supervised by a college faculty member.
- An Arts and Sciences Senior Project Committee (SPC) will oversee the senior project program. The SPC will have the following responsibilities:
 - Approval and continuing supervision of all courses which satisfy the Senior Project Requirement
 - Organization of a Senior Projects Fair at the end of each semester for the public presentation of finished projects
- Grades will be assigned by the official Arts and Sciences faculty advisor or course instructor.

APPENDIX 1

A SAMPLE OF WHAT THE FOUR-COURSE SEQUENCE MIGHT INCLUDE

The Subcommittee provided the CEP with the following model of a core sequence, which we present here for discussion purposes. A successful common course program should impart foundational skills and concepts appropriate for all educated persons, irrespective of disciplinary interests or career focuses; should emphasize commonalities rather than differences among various types of disciplinary interests; and should convey a sense of commitment and thoughtful design by the entire faculty.

STRUCTURE

- Each course will be built around a broadly defined interdisciplinary area of inquiry (see next section for examples). Course content will emphasize basic levels of understanding and modes of analysis and reasoning appropriate to that area of inquiry, and will illustrate the manner in which different disciplinary approaches illuminate different aspects of the area of inquiry.
- In ways that are appropriate for its area of inquiry, each course will promote skills in writing and other forms of communication (e.g. oral, visual), quantitative interpretation (e.g. estimation, statistics, graphs), library/internet research, etc.
- Each course will promote critical thinking with regard to ethical, public, social, cultural, ethnic, and environmental issues relevant to its area of inquiry.
- Each course will be a stand-alone entity, not requiring another course in the program as a prerequisite. This is necessary so that a student who misses one semester because of illness or other causes does not have to wait until the next time the missed course is offered in order to complete the sequence.
- Ideally classes will have no more than 20 students, with no more than 15 students in the first-semester seminar.
- All sections of a given course will operate from the same basic syllabus, reading assignments, exercises, etc. However, there should be enough flexibility in the basic syllabus that each instructor can adapt part of the course to reflect his or her own expertise and insights.
- Each common course will be taught by faculty drawn from an array of disciplines. Individual sections will have a single faculty member in charge.
- An array of supporting operations must accompany the common courses. This includes such things as writing workshops, tutorials, enrichment seminars, and grading assistants.
- Advanced Placement credits will not exempt a student from any of the common courses.
- Transfer students entering as sophomores will be required to take three of the four common courses. Transfer students entering as juniors will be required to take two.

CONTENT

A suggested name for the entire program is "Foundations of Inquiry." Under that umbrella, suggested names for the four individual courses are "Origins," "Nature," "Community," and "Self." These were

selected to imply broad but reasonably coherent areas of inquiry and to satisfy the goal of being relevant to many disciplines simultaneously. Although there is a certain logical hierarchy to the order in which the names are written here, the courses themselves are to be designed so that they can be taken in any order. A few very brief examples of the general types of inquiry that might be addressed in each course are given below.

Origins

Mythological, literary, and scientific accounts of beginnings. Evolution and Darwinism.
Analysis of major concepts and events leading to today's world.

Nature

The nature of scientific inquiry. Fundamental natural laws. Distinctions between animate and inanimate, human and non-human. Self-regulation in natural systems.

Community

Comparative attributes of different political, social, cultural, and economic systems. Notions of legitimate authority. The individual as a member of the group.

Self

Notions of selfhood. Expression through literature, art, drama, etc. Nature and history of reason.
Notions of disease.

We emphasize again that this list is not intended to be complete or authoritative. It is offered simply as a way of promoting further discussion.

APPENDIX 2
MEMBERS OF THE CEP AND GER SUBCOMMITTEES

COLLEGE OF ARTS AND SCIENCES COMMITTEE ON EDUCATIONAL PROGRAMS 2000-2001

Morris Burke, Biology
Gary Ciepluch, Music
William Deal, Religion
Eric Deeds, Undergraduate Student
Elisabeth Köll, History
John Martin, Graduate Student
Gerald Matisoff, Geological Sciences
Janet McGrath, Anthropology [Chair]
Erin McMullen, Undergraduate Student
John Protasiewicz, Chemistry
Richard Settersten, Sociology
Gary Stonum, English

Ex-officio:

Joyce Jentoft, Dean, Graduate Studies
Margaret Robinson, Dean, Undergraduate Studies
Samuel Savin, Interim Dean, College of Arts and Sciences
Angela Woollacott, Arts and Sciences Dean's Designate

Case School of Engineering Representative:

Roberto Ballarini, Civil Engineering

SUBCOMMITTEE ON GER REVIEW

Ignacio Ocasio, Chemistry [Chair]
Philip Banks, Geological Sciences
Timothy Beal, Religion
Daniela Calvetti, Mathematics
Eric Deeds, Undergraduate Student
Timothy Dodd, Assistant Dean, Undergraduate Studies
Grover Gilmore, Associate Dean, Arts and Sciences
Jutta Ittner, Modern Languages and Literatures
Kyle Kercher, Sociology
Kenneth Ledford, History
James Overholser, Psychology
Margaret Robinson, Dean, Undergraduate Studies
Manohar Singham, Physics
Gary Stonum, English

SUBCOMMITTEE ON COMMUNICATION AND CRITICAL THINKING, SENIOR PROJECTS, AND FRESHMAN SEMINARS

Morris Burke, Biology
Gary Chottiner, Physics
William Deal, Religion
Elisabeth Köll, History
Beth McGee, Theater Arts
Erin McMullen, Undergraduate Student
Todd Oakley, English
Margaret Robinson, Dean, Undergraduate Studies
David Singer, Mathematics
Lee Thompson, Psychology
Randall Williams, Assistant Dean, Undergraduate Studies
Angela Woollacott, Associate Dean, Arts and Sciences [Chair]

Supplement B **Helping our Students Become Information Literate**

Overall Goals of University Library Information Literacy Program:

Information literacy is a group of skills that define how one determines an information need; accesses information efficiently; critically evaluates and incorporates information into existing knowledge base; uses information to accomplish specific goals; and understands the many economic, legal, ethical and social issues surrounding the use of information. Competence in information literacy skills is critical for the success of everyone in higher education. The University Library is creating a highly effective teaching presence on campus, centered on the outcomes-based information literacy criteria created by the Association of College and Research Libraries (see standards, attached). This presence builds on the existence of the KSLearn and Teaching with Technology programs. The goal of the Information Literacy Program is to reach the campus community in order to create information literate students, faculty and staff who are able to find, evaluate and use information effectively.

Current Successes of the UL Information Literacy Program:

We feel that all students at CWRU should master basic information literacy skills. For example, the skill of defining an information need and evaluating the wide array of existing sources of information to answer their particular need is critical for any student in higher education today.

- We had a very successful collaboration with Mano Singham and his Physics 122 class during the spring semester of 2001. The material that we covered is here:
<http://www.cwru.edu/UL/Subjects/PHYS/phys122.html> .
- In an effort to reach as many CWRU undergraduates as possible, we are revitalizing our links with the English department's 150 and 148 courses. We are creating an online tutorial that can be used for this audience as well as others. This format is something that students are comfortable with, but at the same time, the tutorial is challenging, educational, and can be adjusted to meet specific outcome goals. See <http://tilt.lib.utsystem.edu> for an example of the tutorial.
- We are also working to integrate information literacy instruction into subject specific upper-level undergraduate and graduate courses. We had a very successful collaboration with the Sociology department in the fall of 2000. This class used the Blackboard system (see attached). At this level we can focus our instruction to specific skill sets and goals.

It is our goal to integrate an information literacy program that will be both comprehensive and tiered within the undergraduate curriculum, responding both to classroom or departmental point of need as well as accreditation requirements.

William Claspy, wpc@po.cwru.edu
Kelvin Smith Library, 368-3595

Supplement C

Undergraduate Education in Practical Ethics

Report of the Deans' Ethics Advisory Committee on
Undergraduate Education in Practical and Professional Ethics

Executive Summary

This report gives a brief but comprehensive picture of the how to integrate ethics into undergraduate education at CWRU. It proposes a coherent plan for a progression of topics in ethics for the undergraduate years. We supply detailed information, links to online resources, and even sample assignments and outlines of lesson plans for those students who have the greatest need for curriculum enhancement in ethics. These students are primarily the engineering students, and secondarily, the students in the natural sciences.

We offer general recommendations for increasing the awareness of ethics in the Case School of Engineering (CSE) and the College of Arts and Sciences (CAS).

- Create and publicize inventories of activities that contribute to ethics awareness.
- Expand resources for teaching ethics and create opportunities for faculty to learn to use these resources.
- Hold workshops to help faculty to use "active learning" methods of teaching ethics.
- Establish requirements for ethics content within courses.
- Develop faculty incentives for modifying courses to include more ethics content.
- Establish ways to encourage extra-curricular ethics activities
- Facilitate increased interactions with the Cleveland community on professional responsibility.

This report gives detailed recommendations for the CSE for three reasons:

- The Senior Survey shows that Case School of Engineering students as a whole are less likely than other CWRU undergraduates to believe that their CWRU education prepared them to understand ethical issues and CSE has fallen further behind in the last three years.
- The recent academic integrity survey, which was administered in spring of 2000, shows that most frequent among the forms of misconduct that students report they commit are falsification and fabrication of laboratory data. This is an issue of special significance for science and engineering students. That students who would never cheat on an exam, engage in falsification, fabrication of lab reports shows that we have not made clear to them the real meaning of academic integrity.
- The CSE curriculum offers many opportunities for greater attention to ethics.
- The CSE faculty has requested help in teaching the ethical issues of their profession or field.

The recent study of the factors important to students whom CWRU could attract show that these students have a strong preference for "active" or what is sometimes called "experiential" learning methods. This is quite consistent with the experience of the committee members who have an extensive background in practical ethics education. In our report we discuss some active learning methods, provide further references, and sample lessons and assignments to online resources.

Undergraduate Education in Practical Ethics

I. The Importance of Practical and Professional Ethics in Undergraduate Education

A. Evidence from the Senior Survey about CWRU's Preparation of Students to Recognize Ethical Issues and Address Moral Problems

Each spring the Senior Survey is administered to graduating seniors at CWRU and at comparison universities (Brandeis, Dartmouth, Duke, Tufts, Tulane, Wake Forest, and George Washington), which are collectively called the "HEDS" universities. This survey showed that CWRU seniors are significantly less likely than are seniors at the other HEDS universities to think that their undergraduate education prepared them significantly to identify moral and ethical issues. In 1997 58% of CWRU students thought so as compared with 68% for HEDS university students. On questions on other topics, CWRU students often judged their college preparation to be as strong or stronger than did the students at other HEDS universities.

CWRU schools and disciplines differ significantly among themselves in the percentage of students who responded positively to the question about ethics. In 1997, a low 44% of the computer science and engineering seniors thought that their undergraduate experience **moderately or greatly enhanced** their ability to identify moral and ethical problems, but a high of 93% of senior nursing students thought so. The percentages for other majors in ascending order were Math & Sciences–54%, Arts and Humanities–66%, Social Sciences–69%, Management–75%. Although one may criticize the crudeness of a one-question measurement, the spread of responses correlates well with:

- ❖ the emphasis upon ethics in the curricula of the different schools and disciplinary groups
- ❖ the self-report of the faculty members in those schools and groups about their readiness to address ethical issues.

The Senior Survey for 2000 indicates a similar pattern but with some notable changes from the 1997 results. A low of 13% of computer science and engineering seniors to a high of 58% of senior nursing students thought that CWRU had **greatly enhanced** their ability understand moral and ethical issues. The percentages of other majors believing that CWRU had greatly enhanced their ability understand moral and ethical issues were, in ascending order: Math & Sciences–25%, Management–26%, Social Sciences–29%, Arts and Humanities–31%.

Between 1997 and 2000, the percentage of seniors reporting that their CWRU education had a positive influence on their understanding of ethical issues increased for most of the major groups. The exceptions were management and CSE students. The worsening scores for CSE students are of greatest concern, because their scores were already lowest in 1997.¹ The students in greatest need of enhancement of their ethics education are those in the Case School of Engineering. The CSE results are more notable when

¹ The comparison of 1997 results with those for 2000 is complicated by a change in the scoring procedures. The 1997 results were reported in terms of the percentage of students who thought that their CWRU education "**moderately or greatly enhanced**" their ability, but the 2000 results reported only the percentage who thought that their CWRU experience had **greatly enhanced** their ability. To make our comparison of CWRU groups we have considered the ratio of the percentage in each particular group-reporting enhancement to the percentage of *all* CWRU seniors giving the same answer. In 1997, 58% of all seniors said CWRU "greatly or moderately enhanced" their understanding of ethics. In the 2000 survey 24% of all seniors said CWRU had "greatly enhanced" that understanding. The higher ratio for each group is in **bold** to highlight the direction of the change.

	CSE	Math & Sci.	Management	Soc. Sci.	Arts & Hum.	Nursing
1997	.75	.93	1.29	1.18	1.14	1.60
2000	.54	1.04	1.08	1.21	1.29	2.41

one considers that in their Engineering Criteria 2000, the Accreditation Board for Engineering and Technology (ABET) and the Computer Science Accreditation Board (CSAB)—the boards that accredit engineering and computer science programs—require programs to demonstrate that their students are proficient in understanding their "ethical and professional responsibilities". Because of the special need, this report gives additional detailed attention to the needs of engineering and computer science students.

The CSE, like the CAS, has conducted a study of the places that each CSE department does or believes it could most easily address ethical issues. Those CSE courses will provide some of the opportunities for curriculum development in practical ethics.

B. Lessons from the Recent Academic Integrity Survey at CWRU

The academic integrity survey conducted in the spring of 2000 gives some evidence of the areas in which students experience moral confusion. Most striking is the finding that **97.9%** of the students who answered the question of how often they had fabricated or falsified lab data, said they had done so at least once. Furthermore, **33%** of students of students answering the question report that they *have* used material without proper attribution. Undoubtedly some of improper use of material is plagiarism. These reported frequency of these two types of wrong doing is much higher than that for other forms of academic dishonesty such as: copying exams, using crib sheets (cheat notes), or as submitting papers written by others, or even *copying* lab reports. Details of the survey results are given in the Appendix to this report.

That very large percentages of students admit to falsifying or fabricating lab data, and that many of students knowingly fail to acknowledge sources, is evidence that students need to better understand the nature of research and scholarship and the basis for the standards of responsible conduct in this area. The alarming figure of 97.9% of those answering the question admitting to falsifying and fabricating lab data shows that this education is especially important in engineering and natural science courses.² The result about lab data strengthens our recommendation that academic integrity be approached as continuous with research integrity and not as "personal ethics."

² Several science and engineering departments, along with several departments in the School of Medicine are participating in an innovative program of group education for faculty and *post-baccalaureate* trainees in the responsible conduct of research. Therefore, the task of meeting the needs of graduate students is being approached in a different way.

II. Improving Ethical Understanding and Practice at CWRU

We recognize that university education in practical ethics takes place in many contexts. We begin by reviewing our overall recommendations for increasing the awareness of ethics before turning to the question of how to structure a progression of topics addressed in courses throughout the undergraduate experience.

- Create and publicize inventories of courses and other activities that contribute to ethics awareness (e.g., 'E'-courses in CSE).
- Expand resources for teaching ethics in addition to those supplied in this report and its appendix. For example, hold a required seminar series similar to the one required for TA training, or as an E-week activity.
- Hold workshops, perhaps with UCITE, to help faculty to identify, use, or create effective "active learning" methods of teaching practical ethics.
- Establish requirements for ethics content within curricula.
- Develop faculty incentives for modifying courses to include more ethics content.
- Establish ways to encourage extra-curricular ethics activities outside of the setting of a course
- Create series of faculty workshops to increase the dialogue about ethical awareness. (Caroline Whitbeck has led some already under the auspices of UCITE, on the ethics of teaching and on creating assignments that reduce incentives to cheat, which revealed faculty interest in such topics.)
- Facilitate increased interactions with the Cleveland community, especially with alumni/ae, that highlight how they cope with professional responsibility.
- Devote some resources to maintaining a coordinated listing of all CWRU activities significant to ethics education and with at least links to all relevant CWRU policies. A place for doing so is available at <http://onlineethics.org/cwru>, and the pages themselves can be maintained by the Online Ethics Center (OEC) staff, but it will take other staff efforts to provide the OEC staff with updated information.

III. A Framework for Undergraduate Education in Practical and Professional Ethics across the Curriculum

The Ethics Advisory Committee recommends the wide use of what is variously, called a "hands on," "practice-oriented," "experiential," or "active" learning approach to ethics education. (According to a just-released study commissioned by CWRU, the students whom CWRU could attract seek a university that teaches with active learning educational methods. The active learning exercises should be chosen so that over the course of their undergraduate career students engage in developing a full range of ethical skills. These include not only making judgments about whether some action is ethical, or which of a set of multiple choices is the best (or least bad), but skills such as the ability to:

- i. Find statements of ethical standards by reputable bodies and evaluate the legitimacy of those standards
- ii. Conduct an ongoing assessment of a problem in a way that does not cause unnecessary harm (e.g., destroy a person's reputation)
- iii. Recognize explanations other than the one that appears most likely
- iv. Fashion responses that will be robust in the sense that they will be wise, even if the situation turns out to be other than the one that seemed most plausible
- v. Recognize when the moral territory is unfamiliar and locate good advice about how to proceed and the likely effects of doing so

For more detailed information on active learning methods that teach a full range of skills for moral problem solving, see "Moral Agents and Problems" at <http://onlineethics.org/essays/education/teaching.html>. That the National Student Pugwash selected this essay for reprinting shows student enthusiasm for these methods.

The Online Ethics Center <http://www.onlineethics.org/> features materials for active learning. The pedagogical presentations in the March 1999 International Conference on Ethics in Engineering and Computer Science held at CWRU featured active learning methods. The conference papers describing these methods are available at <http://onlineethics.org/essays/education/index.html>.

Other valuable methods are already used in those disciplines in the humanities and social science that regularly include ethics in their subject matter. The present proposal does not mean to displace existing disciplinary courses that treat ethics in depth.

IV. Framework for the Progression of Topics in the Undergraduate Experience

This section is also available online at <http://onlineethics.org/edu/cwethed.html>.

The online version has live links to the Web pages mentioned

A. Freshman Orientation:

As of Fall 2000, the first day of Freshman Orientation featured skits depicting predicaments of college life with President Auston

in attendance. These challenge students to think through their actions in a range of situations, from responding to a student who has passed out after drinking, to deciding what kinds of help they may use in doing their assignments. The conversation about the moral responsibilities in an academic community and academic honesty as a value central to the practices of acquiring, augmenting, and transmitting knowledge began here, as it should, at the beginning of orientation. The uniformity of the expectation on students and faculty alike to fully acknowledging all sources and aids used in one's work began at this point.

B. 100-Level Courses, Especially First-Semester Freshman Classes

Orientation to the university as a center of learning and research, and introduction to the practices that define a research university and the centrality of academic integrity to those practices should continue in 100-level courses. These courses introduce disciplinary methods to both upper-class students and first-year students. Here students need to learn not only the methods of creation and discovery used in those disciplines, but also the standards for evaluating and crediting contributions made in the given discipline, and the reasons behind specific requirements on the conduct required to maintain research integrity.

By beginning with an emphasis on crediting sources, faculty can create an atmosphere in which students can safely bring to light the sources they do in fact use. The appropriateness of that use can then be discussed. When students see that the careful reporting of data and full citation of sources are expectations of mature as well as apprentice scholars and investigators, they understand what a research community is, and that they can be a full part of are it. This sets academic honesty in a very different light than when students see it as obedience to a set of arbitrary rules set down by faculty to make easier the faculty's evaluation task. (In contrast, rules such as those against studying exams from previous years foster the negative impression that rules about academic honesty have no moral justification.)

Understanding that academic integrity is continuous with research integrity works to prevent what the recent Academic Integrity Survey shows are the most common serious departures from academic honesty, namely, fabricating or falsifying data on lab reports, failing to properly credit sources and copying others' lab reports.

Students need to understand the criteria for fair use of sources in each new discipline they enter, because what is common knowledge or original work is field-dependent. For example, copying another's word choice and phrasing has a significance in writing poetry that it does not have in writing research reports, and copying another's data has significance in reporting scientific research that it does not have in writing science fiction.

C. Topics for First- and Second-Year Students

Practical problems of being and becoming university students often absorb first- and second-year students, especially those in engineering and computer science. Only the precocious among them think often about life after graduation. Therefore, most first and second year students are most easily engaged in moral reflection and problem-solving that is closely related to matters close to their college experience.

Those enrolled in professional programs, such as nursing, engineering, and accounting, can be encouraged to consider what it is to choose a profession, and the particular responsibilities, temptations and moral pitfalls that attend the one they have chosen. They are faced with present decisions, such as what major to choose and whether to join the CWRU student chapter of their professional society with which to connect an elementary consideration of professional ethics.

Those in pre-professional programs or those who have plans to go into other professions, such as teaching, have a similar immediate interest in the choice they are making in a pre-professional program or major and its implications for their lives. A cross-section of codes of ethics in science-based professions is available at <http://onlineethics.org/codes/codes.html>.

Even those students who pursue a liberal education with no thought of career preparation, face questions of forming realistic expectations and deciding when and whom to trust as they become independent adults. They are often most interested, for example, in what they can expect in dealings with healthcare practitioners or teachers. Such discussions should deal with the responsibilities of students or patients (e.g., the patient's responsibility to provide the practitioner with complete and accurate information) as well as their rights.

Active Learning about Professional Responsibility for First and Second Year Students

Rather than simply studying a code, a more engaging active learning approach begins with discussion of brief open-ended (what-shall-we-do?) problem situations that might arise in the profession in question. During the class session, have the students discuss how they might address the problem. For follow-up homework, assign the students to see what the provisions of the relevant professional society's code of ethics would have to say about the situation or the responses they have proposed. It is often a good idea to assign students to work in groups on this question, or to respond to one another's responses.

Those teaching students in engineering and the applied sciences cases can find a collection of open-ended discussion cases at <http://onlineethics.org/cases/nspe/index.html>. These open-ended cases are based on other closed-ended (did-they-behave-ethically?) cases constructed by the National Society of Professional Engineers (NSPE), to which their Board of Ethical Review (BER) has applied the then current version of the NSPE Code of Ethics. Each discussion case has a link to the corresponding BER case and the BER's judgment on it. This approach helps students to understand

- Why codes of ethics mention only certain ethically significant actions, and not all the moral rules that would apply to their member's actions (The codes focus on matters related to the responsibilities and temptations specific to a their profession.)
- That the ethical considerations they themselves bring forward are not always the same as those that the professional societies consider, but may nonetheless be valid

- That professional societies are concerned not only with responsibility for the public good, but also with promoting cooperation and goodwill among members of their profession.

These discoveries help students not only understand codes, but to evaluate whether and when the provisions within a code of ethics have ethical justification.

Model Active learning assignment on professional responsibility for engineering and science students (for whom the need is greatest):

In class: Present students with one of the research ethics or safety cases best suited to your class topic <http://onlineethics.org/cases/nspe/index.html#research> or <http://onlineethics.org/cases/nspe/index.html#safety>. (If the class is a large one, use small groups, in which case schedule time for each group to briefly report to the whole class). Also, discuss:

- vi. Commission Payment Under a Marketing Agreement--
<http://onlineethics.org/cases/nspe/ec78-7.html>
- vii. Gifts to Foreign Officials--<http://onlineethics.org/cases/nspe/ec76-6.html>
- viii. Writing a Letter of Recommendation--
<http://onlineethics.org/cases/nspe/ec77-7.html>

For homework, assign students to:

1. Read the current code of ethics of the National Society of Professional Engineers at <http://onlineethics.org/codes/NSPEcode.html>. Compare it to one of the other codes in Codes Section of the Online Ethics Center at <http://onlineethics.org/codes/codes.html> closest to your own discipline.
2. Write a brief discussion (100-200 words) of the NSPE's Board of Ethical Review's (BER's) opinion in the case. A link to this opinion is at the bottom of the case discussed in class. State where you agree, where you disagree with their judgment, and why. Send it by email to the instructor by 9 AM before the next class along with discussions of the two NSPE BER cases that correspond to the discussion cases above.
 - ix. Commission Payment Under a Marketing Agreement
<http://onlineethics.org/cases/nspe/nspe78-7.html>
 - x. Gifts to Foreign Officials <http://onlineethics.org/cases/nspe/nspe76-6.html>
 - xi. Writing a Letter of Recommendation--
<http://onlineethics.org/cases/nspe/ec77-7.html>

For further reading:

- Keyword: Professional Responsibility <http://onlineethics.org/keywords/profresp.html>
- Glossary: Professional Responsibility <http://onlineethics.org/glossary.html>
- Web pages and literature on professional responsibility
<http://onlineethics.org/keywords/profresp.html>

D. Other Topics Suitable for First and Second Year Students

- The moral standards that apply to university life
- The responsibilities of citizens
- What comprises the good life?
- How can one respect others with different values without falling into ethical subjectivism
- Voting, driving, responsible drinking
- Ethical question about personal life and values and conduct with friends and family, including both the personal and policy dimensions of birth and death

- Laboratory safety, highway safety, consumer safety, and human interdependence
- Ethics in the news items: There are, unfortunately, always news stories officials brought up on ethics charges or cited for conflict of interest. See Glossary entry for "Conflict of Interest" <http://onlineethics.org/glossary.html#CONFLICTOFINTEREST>

Sample discussion problem: Is it a conflict of interest for faculty members to hire students in their courses for clerical jobs? For babysitting or yard work in their homes? For research assistance? If any of these do create conflicts of interest, would it be acceptable for students who were already employed in any job that was considered above to *then* enroll in the employing faculty member's course? Why or why not?

E. Topics in Courses for Juniors and Seniors

For juniors and seniors, life after graduation takes on more reality, especially when they have internships, summer jobs, and volunteer experiences with potential future employers and other first hand experiences of that life. The ability to evaluate the moral climate of the organizations they will enter after graduation becomes more important to them, especially as they realize how different from their undergraduate life the work world and graduate school may be. Online resources for this activity include:

1. Ethical Guidelines for Employers and Employees with respect to
 - xii. Recruitment--<http://onlineethics.org/codes/emprecruit.html>
 - xiii. Employment--<http://onlineethics.org/codes/empemp.html>
 - xiv. Professional Development--<http://onlineethics.org/codes/empdevel.html>
 - xv. Termination and Transfer--<http://onlineethics.org/codes/empterm.html>
2. Guidelines for Raising Ethical Concerns--<http://onlineethics.org/codes/guidelines.html>
3. Issues in the Responsible Conduct of Research-- <http://onlineethics.org/reseth/index.html>

Other active learning assignments on professional responsibility for science and engineering students
Science and engineering faculty members can find and may freely adopt course-tested assignments, from the course assignment list for PHIL304/404, *Science and Engineering Ethics*, which is at <http://onlineethics.org/edu/see/assignments.html>. (The course instructor requests that faculty members please inform her any assignments you will be using by sending email to her at caw9. She can easily replace the assignment you use with another one in her course, so students taking both your course and hers will not repeat assignments.) The assignments in *Science and Engineering Ethics* increase in difficulty and sophistication over the span of the semester, so faculty members are advised not to assign topics at the end of the course to freshmen and sophomores.

F. Preparing Students for Their Coops, and Advising Them As Ethical Problems Arise

Co-op students would benefit from a committee composed of interested and experienced faculty and former co-op students. This committee would work with the Director of Co-op to provide for on-the-job ethics coaching (on the model of the Ethics Help-Line of the Online Ethics Center <http://onlineethics.org/helpline/index.html>).

Other resources for (and some currently used by) the Co-op Program include:

1. An ethics game widely used in major corporations that reveal many expectations of well functioning corporations (but with varying amounts of explanation and justification of those policies). <http://onlineethics.org/corp/graymatters/martin.html>
2. Thoughtful advice on ethical conduct from the Ethics Office of a major corporation <http://onlineethics.org/corp/ti-ethics.html>

3. Web pages and literature on conflict of interest and conflicting interests and commitments in work and research contexts <http://onlineethics.org/keywords/conf-work.html>

G. Ethics Projects for Seniors

Ethics projects would make a useful capstone experience in ethics for those students who do not already have one. In such projects, students develop brief descriptions of an ethically significant open-ended problem situation of interest to them. Students may work individually or in small teams. Each student takes his, her, or the team's problem to people who have knowledge and experience about how to respond in the student's chosen context (usually an employment or graduate or professional school context). Doing the project often builds the student's confidence about his or her ability to act on ethical convictions in the work or study situation that he or she plans to enter after graduation.

Detailed instructions for conducting such a project in a current 300/400 level course are found at <http://onlineethics.org/edu/see/projects.html>. A sampling of student reports from MIT and CWRU undergraduates and graduate students are included at <http://onlineethics.org/projects/index.html>.

Appendix B contains a quick guide to ethics organized by questions from Don Feke for the ABET Readiness Committee is enclosed as a separate document.

Mary D. Barkley, Chemistry
Donald Feke, Chemical Engineering
Thomas Kicher, Mechanical and Aerospace Engineering
Gerald Saidel, Biomedical Engineering, Committee Chair
Cyrus Taylor, Physics
Caroline Whitbeck, Philosophy and Mechanical and Aerospace
Engineering

Appendix A: Some results from the Academic Integrity Survey

We compare the result on falsification and fabrication of lab data with reported frequency of some other behaviors. For each answer, the results are stated as a percentage of the total *that answered the question*. The percentage of the total surveys turned in that did *not* answer the question is also quoted.

How often have you engaged in the following actions? (Listed in their order in the survey)

	Copied exam w/o student knowledge	Copied exam w/o student knowledge	Use crib sheets (cheat notes)	Copied lab report	Studied old exams w/o permission	Fabricated/falsified lab data
Never	88.2	87.8	80.3	76.0	63.6	2.1
Once	6.6	5.0	9.3	9.8	9.0	40.3
A few times	4.6	4.9	7.4	1.3	20.3	50.9
Many times	.4	.5	1.3	2.9	6.9	6.7
No response (as % of all surveys)	1.4	1.8	1.8	1.6	1.2	54.0³

	Quoted or paraphrased but no citation	Fabricated source material	Copied computer program	Submitted paper another wrote	Lied about family to get extension
Never	67.0	83.4	90.1	96.0	87.1
Once	11.2	7.9	5.4	2.6	7.0
A few times	20.1	8.0	3.6	1.2	5.7
Many times	1.7	.7	.8	.2	.3
No response (as % of all surveys)	1.8	1.7	2.0	2.1	2.5

³ The finding that so large a percentage did not answer the question was rechecked and is accurate.

Appendix B

Response to the ABET Readiness Committee's Request for a "Handbook on Ethics," Which Shows Where the Requested Material Is Available in the Online Ethics Center

Don Feke for the ABET Readiness Committee: The Recommendation of the ABET Readiness Committee (ARC) said "In recognition that most engineering faculty feel unprepared to incorporate meaningful ethics content in their courses, the ARC recommends that the proposed handbook be the equivalent of a *Guide to Ethics for Dummies*."

Caroline Whitbeck for the Ethics Advisory Committee: The first need is a resource to prepare the faculty to include ethics in their courses, since students are not likely to think that as engineers they need to know about something unless they see that the engineering faculty know something about it. Since the suggestions for materials to be included in this resource are already available in the Online Ethics Center for Engineering and Science and on-line resources are superior to hard copy in that they

- link to additional related resources,
- can't be mislaid, and
- can always be used to generate hard copy, if desired.

Once the ARC has had the opportunity to review the statement and add other specific requests that may occur to them, a Web page with this information can be created.

Don Feke for the ARC:

1. A statement (or statements) of philosophy or motivation, answering the question "why is it important to incorporate ethics content into the curriculum."

Caroline Whitbeck for the EAC:

The statement should emphasize that we are not attempting to offer remediation for moral education that should have taken place in childhood. Our goal is to foster learning about the responsibilities of adult citizens and professionals, learning that could not be acquired at an earlier stage. Sample: "The responsibilities of adults as citizens, community members and professionals are complex and demanding. University education should enable students to integrate ethical understanding of these complex responsibilities with the advanced knowledge that they will draw on in deciding how best to meet those responsibilities."

DF/ARC:

2. Some basic definitions of terminology, highlighting the distinctions between terms

CW/EAC: <http://onlineethics.org/glossary.html>

DF/ARC:

For instance, define "academic ethics."

CW/EAC: <http://onlineethics.org/glossary.html#ACADEMICHONESTY>

DF/ARC:

and "research/laboratory ethics."

CW/EAC: <http://onlineethics.org/glossary.html#RESEARCHETHICS>

DF/ARC:

Describe the differences between ethics and standards of professional conduct.

CW/EAC: <http://onlineethics.org/glossary.html#ETHICS>

DF/ARC:

3. What are some basic guidelines regarding intellectual property?

CW/EAC:

It depends on what specific topic interests you. This range from software piracy to benchmarking to a guide for graduate students on using the knowledge they acquired in their thesis research. Here are a few examples:

<http://onlineethics.org/projects/ipr-index.html>

<http://onlineethics.org/keywords/bench.html>

<http://onlineethics.org/keywords/software.html>

<http://onlineethics.org/keywords/software-ownership.html>

<http://onlineethics.org/keywords/business.html>

<http://onlineethics.org/keywords/copyright.html>

DF/ARC:

4. Some guidance on the types of topics that can be included in studies of ethics

CW/EAC:

The listing of topics is at <http://onlineethics.org/keywords/keywds.html> , This list is called "topic index" on the graphical template that appears in the upper left corner of the graphics version of each page (and in the pull down menu of the text version of each page. For example, what are the ethical issues involved in reverse engineering? The above links would get you to <http://onlineethics.org/projects/rev-ind.html> and <http://onlineethics.org/corp/bench.html#193>, which are specifically about reverse engineering and benchmarking. How and when should someone raise an ethical issue? Of our many resources on raising issues--see the topic index--the most generally applicable one is <http://onlineethics.org/codes/guidelines.html>.

DF/ARC:

4. a. Ethics resources. Examples are:
Listing of Web sites pertinent to ethics cases. The ethics cases should not be limited to issues of safety.

CW/EAC:

<http://onlineethics.org/cases/index.html>

The Online Ethics Center also has other resources, such as guides to relevant literature under topics in the topic index, <http://onlineethics.org/keywords/keywds.html>, a comprehensive bibliography, <http://onlineethics.org/bib/index.html>, a listing of relevant organizations, <http://onlineethics.org/abbr.html>, and more.

DF/ARC:

4. b. Annotations on the content and value of these Web sites (do the Web sites contain only case studies, or do they include contain reasoning, interpretation and context?).

CW/EAC:

All our links are annotated. We have an annotated listing of Web sites (in addition to our listing of cases on Web sites) at <http://onlineethics.org/othersites.html>. However, the links that are likely to be most useful for getting to sites that best suit specific needs are those to other sites under particular sections, such as Cases, Research Ethics, Education/Teaching, Essays.

DF/ARC:

4. c. Compilations (or pointers to Web sites) for the Codes of Ethics of the professional societies.

CW/EAC: <http://onlineethics.org/codes/codes.html>

DF/ARC:

5. Handouts and/or packaged study aids that will guide the instructor on how to use the ethics material in the classroom.

CW/EAC: <http://onlineethics.org/edu/instruct.html>

DF/ARC:

6. How can the faculty help students to think about ethical issues? Most faculty will need detailed help on how to assemble and incorporate ethics materials within courses.

CW/EAC: I am willing to run a workshop to show them how to do that.

Supplement D

HIGHLIGHTS AND EXCERPTS FROM THE BOOK
MAKING THE MOST OF COLLEGE (Chapters 7,8,9)
BY
RICHARD LIGHT

(Harvard University Press, Cambridge, 2001)
(originally prepared for the Commission on Minorities, 4/18/2001)

Students, irrespective of background, arrive at college understanding that they will “meet others with different ideas and from different economic, geographic, religious, ethnic, and racial backgrounds.” (p. 132)

Students also assume that fellow students will be like them in certain ways. They will have worked hard in high school and are likely to share certain values such as that they will learn not just from professors but also from their experiences with one another by living together, preparing for classes together, arguing in class together, working together, playing together. They also assume shared values about hard work, academic rigor, excellence, and serious commitment to classes as well as outside -of-class activities. They assume that all the other students treasure the value of a good education, worked hard to get to college, expect to have their thinking challenged in class, and expect to contribute to class. (p. 132,133)

It is this set of shared assumptions that makes the college diversity experience different from that found anywhere else in society. How well a college builds on, capitalizes on and proactively strengthens this basic assumption determines how well ethnic and other diversities enhance learning. But if this assumption of shared values is undercut by the campus culture or faculty members or college or student leadership, then the resulting awkwardness can destroy learning. (p. 132,133)

Students strongly believed that *setting a tone of goodwill* was a “prerequisite that any college must put into place so students can quickly get beyond the trivialities of ‘how different we look’ and begin to interact and learn from one another.” (p. 135, 185). This is especially important because students from *public* high schools have generally had highly negative experiences with diversity. Their prior experiences “do not support the argument that simply exposing people to others who are different will inevitably lead to constructive learning and improved relationships.” (p. 136)

American high schools seem to make remarkably little effort to build a sense of community or shared culture or develop shared values among students of different backgrounds. In fact they seem to unwittingly work against these values. Students’ enthusiasm for diversity becomes eroded when any student’s serious commitment to education becomes compromised by accommodations to racial and ethnic diversity. (p. 136,141)

Nonwhite students said that currently high schools send a corrosive message to all students: that “educational excellence is threatened when a school serves a racially or ethnically diverse group of students. As a result, “making diversity work” is seen as an *oppositional* concept to demanding hard work and achieving excellence. Nonwhite undergraduates report a troubling range of experiences in schools where “making it possible for students from different backgrounds to just get along” became the *primary* objective” (p. 144). Leaders of high schools try to homogenize experiences instead of challenging students with the most rigorous programs they can handle.

Nonwhite students believe this has catastrophic consequences. One result is that some white students and parents resent it. The other result is that nonwhite students are, just like their white counterparts, not pushed to excel. The nonwhite students feel they “take a double hit. First, they are blamed by white students for weakening the quality of those students’ education. And second, they themselves are not challenged.” (p. 144)

Once at college, Asian-American students feel that they are welcome guests and feel that “it is not the obligation of the college to change things in response to their arrival.” (p. 156) But Latinos and African Americans felt that colleges should make some changes to accommodate and welcome them, although there was some disagreement on the details. They all *strongly opposed* having separate ethnically based dorms or residence halls. (p. 157) But they did feel that changes in the curriculum to include more readings by Latino and African American authors would be

good. 60% of white students supported this but the remaining 40% felt that these changes “should reflect new and exciting developments in academic disciplines, not ethnic changes on campus.” (p. 159) Some nonwhite students felt patronized and had a sense of awkwardness when singled out and given ‘special treatment’ because of their ethnicity. (p. 158)

Minority students also felt that there should be physical places on campus for members of these groups to gather, socialize, and to sponsor academic and social events. (p. 157) These students felt that the ethnically based groups played a valuable role in the life of the campus but they also felt that *there was a danger in making it too easy to withdraw into the “confines of a physical space where everyone looks like them”* (p. 191). They strongly supported Harvard’s insistence that the activities on campus be *inclusive*. As a result, say, a significant number of active participants in the Hillel Drama Society are not Jewish; and about one third of the Kuumba singers are not African Americans. This resulted in events organized by these groups being attended by students and their families from *all* ethnic groups. Student leaders of these groups expressed pleasure and surprise at the number of students from other ethnic groups who wanted to join in their activities. Co-sponsorship of events by groups crossing ethnic and religious boundaries has also resulted in events that are well attended and inclusive, while still retaining their ethnic identity (p. 193,194). Students singled out for praise those student leaders of ethnic-based organizations who made *all* members of the campus community feel welcome at their events. Such leaders seemed to have realized that their organizations could have a major impact on the *entire* campus and not just their members (p. 199).

Students realize that it takes courage from both college and student leaders, especially leaders of ethnic group organizations, to *insist* on a policy of inclusion, and the hard question is whether they have the courage to carry it out (p. 193). They are aware that of the potential for conflict between the discussions and activities of ethnic group organizations (which can sometimes result in a form of ‘groupthink’) with maintaining an attitude of goodwill to nonmembers.

The *first few days and weeks* of freshman year were critical in shaping the experiences of incoming students about their future years in college. Student memories of critical moments and events in college cluster heavily in the first few weeks of college, and wield a powerful influence on their subsequent behavior and attitudes (p. 204).

In colleges where diversity is working reasonably well, students reported that campus culture builders (college and student leaders and faculty) made a *relentless effort*, even before they arrived on campus, “to encourage all students to take full advantage of campus diversity” (p. 195).

Deans and other adults should convey to the students that this is a once-in-a-lifetime opportunity to experience a new set of people with new ideas that could challenge their own, *but with whom they share a strong set of academic values and work ethic*.

Students should be made aware of the importance of maintaining an attitude of goodwill by specific activities designed to show them the kinds of situations they might encounter. They will then be more likely to assume that any ethnic or religious faux pas that might occur is due to the kind of lack of awareness and knowledge about others that college is designed to overcome, and not simply an act of hostility or malice (p. 132ff).

Harvard sends each freshman (in the summer before their arrival) a packet of essays by a range of authors (Henry Louis Gates, Henry David Thoreau, Anne Fadiman, etc.). All the essays have the theme that “finding common ground with others is often a challenge and requires continuous effort. It does not just happen” (p. 197). The students are expected to read the essays and then, *before classes begin*, a group of about twenty students meet for a full morning with a faculty member to discuss the readings. The purpose is to “invite students to think together about how they will deal with the diversity of students they see around them every day” (p. 197).

Students also suggested that one way to overcome differences was to provide more opportunities for finding the common ground of shared academic values. One example is to form the small recitation/discussion sections of large courses based on dormitories and/or eating halls, and have these sections meet in seminar rooms in the dorms just before dinner. This allows for the discussion link to be continued after class over dinner, thus creating opportunities for the academic link to strengthen the social link (p. 208).