ARIZONA STATE UNIVERSITY

GENERAL STUDIES COURSE PROPOSAL COVER FORM

Course information:

*Copy and paste **current** course information from Class Search/Course Catalog.*

Academic Unit: **Computing, Informatics, and Decision Systems Engineering** Department: **Industrial Engineering / Engineering Management**

Subject: **IEE** Number: **485** Title: Systems Design Capstone 1 Units: 3

Is this a cross-listed course? (Choose one)
If yes, please identify course(s)

Is this a shared course? (choose one) If so, list all academic units offering this course
Course description:

Requested designation: (Choose One)
*Note- a **separate** proposal is required for each designation requested*

Eligibility:
Permanent numbered courses must have completed the university's review and approval process.
For the rules governing approval of omnibus courses, contact the General Studies Program Office at (480) 965-0739.

Area(s) proposed course will serve:
A single course may be proposed for more than one core or awareness area. A course may satisfy a core area requirement and more than one awareness area requirements concurrently, but may not satisfy requirements in two core areas simultaneously, even if approved for those areas. With departmental consent, an approved General Studies course may be counted toward both the General Studies requirement and the major program of study.

Checklists for general studies designations:
Complete and attach the appropriate checklist

- Literacy and Critical Inquiry core courses (L)
- Mathematics core courses (MA)
- Computer/statistics/quantitative applications core courses (CS)
- Humanities, Fine Arts and Design core courses (HU)
- Social and Behavioral Sciences core courses (SB)
- Natural Sciences core courses (SQ/SG)
- Global Awareness courses (G)
- Historical Awareness courses (H)
- Cultural Diversity in the United States courses (C)

A complete proposal should include:

- ☒ Signed General Studies Program Course Proposal Cover Form
- ☒ Criteria Checklist for the area
- ☒ Course Syllabus
- ☒ Table of Contents from the textbook, and/or lists of course materials

Contact information:

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Department Chair/Director approval: *(Required)*

Chair/Director name (Typed): Ronald Askin Date: 11/2/2012

Chair/Director (Signature):

Arizona State University Criteria Checklist for

LITERACY AND CRITICAL INQUIRY - [L]

Rationale and Objectives

Literacy is here defined broadly as communicative competence in written and oral discourse. **Critical inquiry** involves the gathering, interpretation, and evaluation of evidence. Any field of university study may require unique critical skills which have little to do with language in the usual sense (words), but the analysis of spoken and written evidence pervades university study and everyday life. Thus, the General Studies requirements assume that all undergraduates should develop the ability to reason critically and communicate using the medium of language.

The requirement in Literacy and Critical Inquiry presumes, first, that training in literacy and critical inquiry must be sustained beyond traditional First Year English in order to create a habitual skill in every student; and, second, that the skills become more expert, as well as more secure, as the student learns challenging subject matter. Thus, the Literacy and Critical Inquiry requirement stipulates two courses beyond First Year English.

Most lower-level [L] courses are devoted primarily to the further development of critical skills in reading, writing, listening, speaking, or analysis of discourse. Upper-division [L] courses generally are courses in a particular discipline into which writing and critical thinking have been fully integrated as means of learning the content and, in most cases, demonstrating that it has been learned.

Students must complete six credit hours from courses designated as [L], at least three credit hours of which must be chosen from approved upper-division courses, preferably in their major. Students must have completed ENG 101, 107, or 105 to take an [L] course.

Notes:

1. ENG 101, 107 or ENG 105 must be prerequisites
2. Honors theses, XXX 493 meet [L] requirements
3. The list of criteria that must be satisfied for designation as a Literacy and Critical Inquiry [L] course is presented on the following page. This list will help you determine whether the current version of your course meets all of these requirements. If you decide to apply, please attach a current syllabus, or handouts, or other documentation that will provide sufficient information for the General Studies Council to make an informed decision regarding the status of your proposal.

Proposer: Please complete the following section and attach appropriate documentation.

ASU - [L] CRITERIA

TO QUALIFY FOR **[L]** DESIGNATION,THE COURSE DESIGN MUST PLACE A MAJOR EMPHASIS ON COMPLETING CRITICAL DISCOURSE--**AS EVIDENCED BY THE FOLLOWING CRITERIA:**

YES	NO		Identify Documentation Submitted
☒	☐	**CRITERION 1:** At least 50 percent of the grade in the course should depend upon writing, including prepared essays, speeches, or in-class essay examinations. *Group projects are acceptable only if each student gathers, interprets, and evaluates evidence, and prepares a summary report*	See IEE485 Syllabus

1. Please describe the assignments that are considered in the computation of course grades--and indicate the proportion of the final grade that is determined by each assignment.

2. **Also:**

Please **circle, underline, or otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-1".**

C-1

YES	NO		
☒	☐	**CRITERION 2:** The composition tasks involve the gathering, interpretation, and evaluation of evidence	See IEE 485 Syllabus

1. Please describe the way(s) in which this criterion is addressed in the course design

2. **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-2".**

C-2

YES	NO		
☒	☐	**CRITERION 3:** The syllabus should include a minimum of two substantial writing or speaking tasks, other than or in addition to in-class essay exams	See IEE 485 Syllabus

1. Please provide relatively detailed descriptions of two or more substantial writing or speaking tasks that are included in the course requirements

2. **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-3".**

C-3

ASU - [L] CRITERIA

YES	NO		Identify Documentation Submitted
☒	☐	**CRITERION 4:** These substantial writing or speaking assignments should be arranged so that the students will get timely feedback from the instructor on each assignment in time to help them do better on subsequent assignments. *Intervention at earlier stages in the writing process is especially welcomed*	See IEE485 Syllabus

1. Please describe the sequence of course assignments--and the nature of the feedback the current (or most recent) course instructor provides to help students do better on subsequent assignments

2. **Also:**

Please **circle, underline,** or **otherwise mark** the information presented in the most recent course syllabus (or other material you have submitted) that verifies **this description** of the grading process--and label this information **"C-4".**

C-4

Course Prefix	Number	Title	Designation
IEE	485	Systems Design Capstone 1	

Explain in detail which student activities correspond to the specific designation criteria. Please use the following organizer to explain how the criteria are being met.

Criteria (from checksheet)	How course meets spirit (contextualize specific examples in next column)	Please provide detailed evidence of how course meets criteria (i.e., where in syllabus)
1	Team written assignments, individual semester project report, final team presentation, and written peer assessments acount for 86% of the grade	See the highlighted table on papge 2 of the syllabus identifying points for the assignments and quizzes.
2	Each individual student will gather the semester team project assignments and accomplishments, interpret the learned outcomes, evaluate the results, and prepare an individual final report.	See the highlighted paragraph on page 2 of the syllabus.
3 4	There are six team written assignments, an individual semester project report, a final team presentation that requires each student's participation, and a written peer assessment report. The six team project assignments assigned throughout the semester will be graded immediately after being submitted such that timely feedback to the students can be provided.	See the highlighted portions of the Readings, Special materials, Required Activities, Assignments, and Quizzes section of the syllabus.

IEE 485 Systems Design Capstone I
Course Syllabus

Instructor: Dr. Daniel R. McCarville, 480-727-7674, daniel.mccarville@asu.edu
Office Hours: TBD
Class Meeting: TBD

Teaching Assistant:
TA Office Hours:

Textbook: *A Guide to the Project Management Book of Knowledge (PMBOK Guide)* – Fourth Edition, available at ASU Library Online
Various articles and short papers.

Optional References: TBD

Prerequisites: Must be a senior Engineering BS/BSE student and have completed ENG 101, IEE 475 or IEE 477, and have completed with a grade of C or better IEE 376 or IEE 476.

Course Description: This class, IEE 485, is the first of a two semester senior capstone project course; the second class is IEE 486. In IEE 485, students will select their capstone project, thoroughly plan the project, and prepare for the execution of the project which will be accomplished in IEE 486.

Learning Objectives: Upon completing IEE 485, students will understand the requirements for defining a project, planning a project, creating a project schedule in Microsoft Project, establishing a budget, and writing project communications and controls to be applied during the execution phase of the project.

Topics: The following topics will be covered:

- Academic honesty, plagiarism (throughout the semester)
- Innovation (~one week)
- Project scope identification (~one week)
- Project planning (~two weeks)
- Microsoft Project (~one week)
- Budget/cost control (~two weeks)
- Project Risk Management (~one week)
- Project execution (~one week)
- Project control (~one week)
- Communications (~two weeks)
- Oral/written presentations (~two weeks)
- Ethics (throughout the semester)

Readings, Special Materials, Required Activities, Assignments, and Quizzes

Classes will consist of lecturing, active learning exercises, discussions, and presentations.

Assignments and class schedule will be posted on Blackboard. Completed assignments will be posted to Blackboard. Students are expected to put in at least 6 hours of work each week.

Students will be divided into teams. Each team will produce a Project Scope document, detailed Work Breakdown Structure and dictionary, Project Schedule Baseline in Microsoft Project, Project Budget Baseline, Project Risk Management Plan, and a Monitor and Control Plan for the project once it gets started.

Each team will give oral presentations for their project proposal; each team member must participate in the presentation. Students will be introduced to their Mentors for the projects (primarily industrial) who are also invited to the final presentations where the students will also provide the final documented project plan to their mentors.

Each individual student will gather the semester team project assignments and accomplishments, interpret the learned outcomes, evaluate the results, and prepare an individual final report.

Finally, each individual student will write a report explaining their role in the team and evaluate the performance and contribution of each of their team members. Final grades of each student will depend heavily on the results of their team members' peer reviews. A weight between 0 and 100% will be applied to the team assignments and final team presentation grade for each student based on their peer reviews.

Team written assignments	300 points
Individual semester project report	100 points
Final team presentation	100 points
Individual written quizzes	100 points
Written peer assessment report	100 points
Total	700 points

Classroom Behavior

Cell phones must be turned off during class to avoid causing distractions. Laptops must also be turned off during class with the exception of dates when laptops are required for the classroom exercise or training. The use of recording devices is not permitted during class. Any violent or threatening conduct by an ASU student in this class will be reported to the SU Police Department and the Office of the Dean of Students.

Absence & Make-up Policies

Accommodations will be made for religious observances provided that students notify the instructor at the beginning of the semester concerning those dates. Students who expect to miss class due to officially university-sanctioned activities should inform the instructor early in the semester. Alternative arrangements will generally be made for any examinations and other graded in-class work affected by such absences. [Note: The preceding policies are based on ACD 304–04, "Accommodation for Religious Practices" and ACD 304–02, "Missed Classes Due to University-Sanctioned Activities."]

Academic Integrity

All students in this class are subject to ASU's Academic Integrity Policy (available at http://provost.asu.edu/acadmicintegrity) and should acquaint themselves with its content and

requirements, including a strict prohibition against plagiarism. All violations will be reported to the Dean's Office, who maintains records of all offenses.

Disability Accommodations

Suitable accommodations will be made for students having disabilities and students should notify the instructor as early as possible if they will require the same. Such students must be registered with the Disability Resource Center and provide documentation to that effect.

IEE 485 Systems Design Team Project

Students will be divided into teams of no more than four team members. The team's will select their project from a list of projects provided by the industry sponsors. The same project will be used by each team throughout their capstone experience, IEE 485 and IEE 486.

Each team will produce the following documents as assignments during the semester:

- Project Scope Document
- Detailed Work Breakdown Structure and Dictionary
- Project Schedule Baseline in Microsoft Project
- Project Budget Baseline
- Project Risk Management Plan
- Monitor and Control Plan

At the end of the semester, each team will combine these documents into a formal project proposal and plan, and deliver them to their respective sponsors. This report will also be their launching document for the execution of their project in IEE 486.

Each team will give an oral presentation for their project proposal and plan; each team member must participate in the presentation. The industry sponsors and mentors will be invited to the presentations.

Each team assignment will be graded during the semester based on their due dates. The grade for the team presentation will be based on the following criteria.

Technical content quality:

- Use of project management principles
- Project analysis
- Logical conclusions
- Completeness
- Question and answer response

Presentation quality:

- Organization and flow
- State presence
- Use of audio and visual aids
- Use of the team
- Audience involvement

Each student will also complete a peer review for each of their team members identifying the team member's contribution, recommended project grade for the team member, and comments about the team member's performance.

The team assignments are worth 300 points.

The team presentation is worth 100 points.

IEE 485 Systems Design Team Project

Students are required to complete an individual, formal, semester project report. This report will be collected and graded at the end of the semester.

The report will include:

- Description of the project and the industry sponsor
- Summary of the project assignments
- Detailed description of the team's accomplishments
- Detailed explanation of the lessons learned while working on the team during the semester, and the actions taken to improve the team's performance
- Recommendations for the team during the execution phase of the project in IEE 486 to assure the team effectively and efficiently completes the project
- Interpretation of the student's learned outcomes

This report is worth 100 points.

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