EDMM 4920 – Multidisciplinary Senior Project
Course Syllabus

**Lecturer and
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Catalog Data

Open-ended multidisciplinary team projects involving systems design, analysis, or applications. Results in a tangible system, written report, and presentation. When completed satisfactorily with EDMM 4910, this course is approved as a writing-intensive course which may fulfill the baccalaureate-level writing requirement of the student's curriculum. *Prerequisite: Grade of "C" or better in EDMM 4910 and approved project. Co-requisite: EDMM 4930.*

Writing-intensive Course Note

EDMM 4920 is a writing-intensive class in which students prepare multiple documents, including a project description for inclusion in the SEDP brochure; an analytical essay on engineering ethics; reviews of professional lectures or opportunities; a professional poster on the project; and either a full, formal project report or a summary project report. Students also give several oral presentations. These communication activities will be evaluated on the basis of the demonstrated content, technical merit, organization, clarity, correctness, and conventions of professional English. Following expectations in professional settings, students are expected to use conventions of professional written, oral, and visual English for all communication activities. Since this class serves in partial completion of the baccalaureate-level writing requirements, students are required to receive a minimum grade of "C" in this class to fulfill curricular graduation requirements. The quality assessment of these project deliverables will comprise the major portion of your final grade in the class.

EDMM 4920 fulfills the requirement for Writing Courses (Proficiency 2).

Prerequisites by Topic

1. Working technical knowledge of appropriate domain.
2. Understanding of the design process as applied to problem solving.
3. Ability to organize and communicate ideas in written and verbal format.
4. Familiarity with word processing and presentation software.
5. Ability to coordinate and communicate with classmates and faculty.

Evaluation

Grades will be determined based on your project process and performance, with grades given for both individual and team activities. Your EDMM 4920 and 4930 advisors will evaluate your project. Class attendance, participation, and professional approach will be important for your grade. Course grading will use the following scale:

Outstanding work	A	92-102%
	BA	88-91%
Good work	B	82-87%
	CB	78-81%
Average work	C	72-77%
	DC	68-71%
Unacceptable work	D	61-67%
Failing work	E	60% or below

Course Objectives and Required Activities

Objective 1:

- Work with team and advisors to identify and perform all necessary tasks to complete quality technical project
- Use the design process knowledgeably and effectively to provide client with a satisfactory solution

Objective 2:
- Present written and/or oral team status reports as assigned
- Demonstrate involvement in and support for team activities
- Complete peer-evaluations of team and self performance

Objective 3:
- Analyze and present technical results and make recommendations as appropriate
- Draft, edit, and finalize a complete, well-organized, professional quality project report, adhering to faculty, advisor, and sponsor requirements and needs
- Develop, draft, and finalize a professional quality poster of project goals, results, and recommendations
- Present all written work in a professional portfolio under letter of transmittal

Objective 4:
- Give interim oral progress reports and rehearsal presentations
- Review and evaluate taped dress rehearsal for final presentation
- Present project at the Senior Engineering Design Project Colloquium
- Understand and answer questions regarding project from the general audience

Objective 5:
- Attend and report on professional development lectures and opportunities (CEAS Lecture Series, professional engineering organizations, other approved professional development activities)

Objective 6:
- Read about and contribute to class discussion on engineering and professional ethics
- Complete written assignment on professional / engineering ethical issues

Assignments and Percentage Values

Exam	8
Engineering ethics segment	7

Course Objectives (By the end of the semester, the student should…)	Performance Criteria
Be able to apply technical tools and skills to develop a solution to a problem.	**F1.** Define technical problem, compare alternative options, and design a solution.
Be a contributing member of a project team.	**E4.** Contribute to team products.
Be able to summarize project goals and accomplishments in a format appropriate to situation.	**G2.** Convey technical information effectively in graphical form (posters, PPT, histograms, FEA outputs).
Be able to design and effectively deliver a group presentation of ongoing and completed project activities.	**G4.** Present information in oral format that is well-organized, useful, and effectively delivered.
Seek out and participate in ongoing professional development.	**H1.** Attend and participate in activities of professional organizations.
Participate in and communicate about professional responsibilities and engineering ethics.	**I1.** Evaluate the ethical dimensions of professional engineering and technological practices.

Meeting minutes	3	(Failure to submit regular meeting minutes will result in an "I")
Draft and final project report	20	(The project report may be replaced by an executive project summary)
Professional quality poster	18	(Includes storyboards, draft, revisions, and final version)
Oral progress reports	12	(Two at 6 points each)
Dress rehearsal (SEDP)	8	
Final oral presentation (SEDP)	15	
Peer evaluation	5	
Attendance***** / participation	4	
Lifelong learning	[4]	

* Note that attendance is absolutely required; unexcused absences will result in loss of points.

Grading

Your course grade will be based on your class participation and on your written, oral, and in-class activities. Team activities will typically have both a team grade and an individual evaluation as well. The grading criteria and specifics will be discussed and identified on assignment sheets as appropriate. The quality of work in EDMM 4920 is expected to be considerably higher than that in EDMM 4910. In general, I use the following standards in assigning letter grades (or percentage equivalents) on written material:

A
Superior
Meets or exceeds all the **objectives** of the assignment.
Content is mature, is thorough, and addresses audience needs.
Style is clear, accurate, and direct.
Organization and **format** make information understandable, accessible, and attractive.
Mechanics and **grammar** are correct and meet highest professional standards.

B
Good
Meets the objectives of the assignment but needs improvement in style or organization; or contains easily correctable errors in grammar, format, or content; or content is superficial.

C
Fair
Needs significant improvement in concept, details, development, organization, grammar, or format; may be formally correct but superficial in content.

D
Marginal
Meets some of the objectives but ignores others; content is inadequately developed or contains numerous or major errors.

E
Unacceptable
Does not have enough information; or does something other than the assignment required; or contains major errors or excessive errors.

About EDMM 4930

You are concurrently enrolled in EDMM 4930, which serves as a sort of lab section for the second semester of senior design. We created EDMM 4930 so that student teams and faculty advisors would have at least one common block of time for meetings and project activities. *All* EDMM 4920 students and their project advisors have this time officially available. As a class, we will not meet every week for EDMM 4930; we will use it primarily for oral progress reports and SEDP rehearsals, which we do not have sufficient time for in our regular Monday class. But you should take advantage of this available opportunity as a team.

EDMM 4930 is scheduled on Fridays. You are expected to be available for any class meetings at this time, or if your advisor chooses to hold team meetings at this time. Excuses of "the team can't find time to get together to work on the project" or "I have to work at that time" will *not* be accepted.

Required EDMM 4920 Assignments and Project Activities

Engineering Ethics Assignment

The class as a whole will undertake a three-week segment that will require you to discuss and undertake some activities in engineering ethics. You may contribute to the design of this assignment by suggesting activities or readings we should examine. The ethics assignment will involve reading, analysis of resource materials, class discussion, and writing. An assignment sheet is provided (see pp.7-8), and each student will submit an original, insightful, and professional quality paper. Participation in the ethics class activities and your individual paper constitutes seven percent (7 %) of your course grade.

Periodic Progress Reports / Meeting Minutes

Weekly progress reports (memo or minutes format) will be directed to both EDMM 4920 and 4930 advisors, and any industry sponsor(s). Coordinate with your advisors and sponsor to establish when and in what format (written, email, etc.) they want written reports / minutes delivered. Copy all advisors in their preferred format.

Meeting minutes should consist of the following specific items (templates of which you have been provided):
1. Accomplishments since the last meeting.
2. Tasks and information required for the upcoming week, including individual tasks.
3. Scheduled time for activities during the upcoming week.
4. Discussion of any attached Gantt chart.
5. Any additional items that your advisor and/or sponsor wishes reported.

Be prepared to include a current/updated Gantt chart that indicates your progress, when requested. Show your planned vs. actual timelines. Don't delete planned activities when times or milestones change.

Written Final Project Report: Full formal report *or* professional summary report

All projects must be documented with a professional quality report. Final contents, writing, and appearance of these reports must meet the highest professional standards. For EDMM 4910, the final written report was a formal interim project report, including all required materials discussed in class and on handouts. For EDMM 4920, the final written report will be *either* a full, formal project report, *or* a professional summary report. Your advisors will indicate their preferences for which of these you will write and submit.

Traditional full formal report: This is the traditional project report, including a letter of transmittal, table of contents, list of figures and tables, executive summary, appropriate appendices, and all other materials to be discussed in class and shown on handouts. This report typically is 15 to 30 pages, not including appendices.

Professional summary project report alternative: Alternately, individuals and/or teams who have established in EDMM 4910 that they are already able to produce a quality, professional formal project report may be permitted to substitute a (approximately) 5 to 7-page project summary. Advisors, including Dr. Aller, *must* support this alternative method of documenting the project. This report will provide a complete summary of the project, and will be accompanied by any appendices necessary to sponsors, advisors, or instructors, as agreed upon by all.

For both types of report, teams will submit drafts for review, to both Dr. Aller and to their technical advisor(s). *See pp. 10 and 11 of this document for typical / expected organization of both formal and summary reports.* Dr. Aller will discuss appropriate binding of all final report copies in class and will bring examples.

Project Poster

In addition to the final project report, all teams are required to create a professional poster on their project, for display at SEDP and in the halls of Parkview Campus. Posters will be developed through several versions, including outline, story board, and multiple drafts. Teams are advised to take good quality photos of project activities and development throughout the semester for use in posters and presentations. Instruction and examples

of professional-quality posters will be provided and discussed.

Reviews of Lectures / Professional Opportunities (Lifelong Learning)

You must attend and respond to a minimum of *four* lectures or other professional development activities over the course of the *EDMM 4910 / 4920 sequence*. Guest lectures typically occur during the semester to enhance senior students' professional development. As a group, we will negotiate which lectures you should attend and any requirements for responses to these lectures. In addition to scheduled lectures, you may attend and report on other professional activities, including conferences/conventions, participation in student professional societies, attendance at university-sponsored events, etc. Be sure to inquire if an activity meets requirements *in advance.*

Periodical Oral Status Reports and Group Presentation(s)

Each team will give two oral status reports this semester. These oral status reports will be limited to 7 - 9 minutes (unless otherwise indicated), and each individual should present some part of the status report. Note that the audience focus or level of formality required may change from report to report; be aware of these changes and adjust your progress reports accordingly. *Proof of growing progress and depth of results (work product) should be evident.* When appropriate, oral reports should *briefly* address the context of the project and any problems or challenges faced, and may show and discuss the Gantt chart. We will allow additional time for questions from the audience. Faculty advisors should attend and evaluate these progress reports. Teams will also present an "intro only" segment before the SEDP conference, and a full dress rehearsal for SEDP will be made the week before.

⇒ *You are responsible for asking your advisor(s) to attend all presentations and for providing Dr. Aller with any timing constraints or requests well in advance of the day of presentation!* ⇐

Final Presentations (SEDP):

A formal, professional oral presentation will be given at the college-sponsored Conference on Senior Engineering Design Projects (SEDP. This conference will be advertised inside and outside the university to allow attendance by interested parties throughout the manufacturing and educational communities. The final presentation is limited to 21 minutes total, must have roughly equal contribution from all team members, and will be followed by audience questions.   The dress rehearsals for the final presentation will be scheduled for the week before, in class and in our EDMM 4930 session. *Your advisor and other EDMM faculty should attend your rehearsal.* The dress rehearsal(s) should be polished and complete, as if you were presenting at the design conference; here again, the "draft" counts nearly as much as the final version. Your rehearsal may be taped; if so, you must watch the tape and submit an evaluation on your own presentation *before* the SEDP conference.

Individual Design Notebook and Peer Evaluations

Each student maintains an individual design notebook for the duration of the design project.   Notebooks may be collected periodically for review and commenting. (See EDMM 4910 syllabus / handouts for additional details on design notebooks.) Be sure to continue entering information and progress throughout EDMM 4920. Design notebook entries should detail individual activities, materials reviewed or originated, knowledge gained, decisions reached, and plans for future work. Your individual efforts toward the overall group project and group goals, and discussion and documentation of assignments that were (or were not) completed by you, should be obvious in your design notebook. Note that design notebooks may be required to be collected at the end of the project.

As in EDMM 4910, completion of peer evaluations will be required at least once during the semester. These evaluations allow us to see "behind the scenes" of team activities and participation. These and the design notebook contents will be used for a portion of both "Peer Evaluation" and "Participation" points.

Additional Required Project Materials

Team Project Portfolio

Each team will provide a "Project Portfolio" in a professional binder, to be submitted at the end of EDMM 4920. (Remind Dr. Aller to show you examples of acceptable and appropriate portfolios.) The portfolio will include the following:

- Printed copy of the final EDMM 4910 PowerPoint presentation (can print up to 4 slides / page).
- Bound, archival copy of the final project report (EDMM 4920)
- Color, hard copy prints out of PowerPoint slides of final EDMM 4920 presentation (SEDP)
- Color, 8.5 x 11 print of the final project poster (EDMM 4920) (I am likely to have this already.)
- A DVD or flash drive containing electronic files of all documents listed above, including those relevant to the final reports / summary, the PowerPoint slides used for presentations, and any other related electronic files relevant to the project. Also include the electronic file for the final EDMM 4910 report.

  First and foremost, distinguish *your* DVD from any other that I'll receive! The DVD/flash drive must be well organized, with each file labeled with a clear and unambiguous specific title (e.g., ***PH Test Bench Final SEDP presentation slides***, not ***PowerPoint slides***; PH ***Test Bench Final Summary Report***, not ***Report File***; etc.). Include an MS Word format file called "DVD Contents.doc" that lists all files contained on the DVD, with a brief explanation of each file. The DVD should itself be clearly labeled (project title, EDMM 4920 semester, etc.) and be inserted into a pocket of the portfolio so that it does not become separated from the portfolio.

This portfolio will be submitted to Dr. Aller at the end of EDMM 4920. *Do not wait* until the end of finals week to compile and submit your final materials. *If requested,* the portfolio may also contain copies of the agenda and minutes from each project meeting with the advisor and/or industrial sponsor, and other materials produced from team activities.

In addition to the team project portfolio, each EDMM 4920 team will submit complete hard copies of the final report or summary to [each of] your technical advisor[s]. Your advisors should tell you if they want an electronic copy (you'd be wise to offer it even if they do not say so). You may also need to submit a final report to the project's sponsor.

Failure to submit an acceptably formatted Team Project Portfolio, the additional reports, and the well-organized DVD will result in a course grade of "I" until such time that acceptable materials are received by Dr. Aller.

E-mail Communications

All e-mail communications relevant to the project should be copied to the faculty advisor. It may be beneficial to also include hard copies of these communications in your team project portfolio or to submit them directly to Dr. Aller. Should any concerns regarding team contributions or issues with faculty advisors arise, these copies help Dr. Aller to intercede and assist as necessary.

In Case of Team / Advisor Problems…..

As in industry, you will find yourselves responsible to multiple parties: your team, your technical advisor(s), your sponsor, and Dr. Aller. If Dr. Aller or your technical advisor learns of non- or miscommunication, we will call a required and immediate meeting of all team members and advisors.   Such communication problems may consist of:

- Failure to notify technical advisor, sponsor, and/or Dr. Aller of changes to schedule, problems with meeting times, teamwork problems, or other concerns in a timely and proactive manner.
- Failure to notify advisors of in-class presentations, requesting their presence and any constraints, in advance.
- Failure to notify Dr. Aller of the above, in time (2 days) to schedule presentation order to accommodate advisors.
- Failure to communicate with advisors on required documents, or to request advisors' feedback on documents.
- Failure to read and understand provided handouts and/or class discussions, or to ask questions as necessary.

Consequences of continued problems of this nature will be lowered grades. Please be proactive at all times, keep everyone well-informed, and avoid such unprofessional situations.

Ethics in Engineering and Professional Settings
EDMM 4920 – Spring 2016

The purpose of this assignment is to help us all think about ethically significant situations that may arise in our work and professional practice. All of us have been or will be faced with decisions and actions that must take into account these situations. Overlooking, ignoring, covering up, or just being ignorant of their importance is not an option in professional life. So let us begin, in a safe and supportive environment, to explore these issues and our potential responses to them. A secondary objective of this assignment is to continue practicing clear, concise, and insightful writing on engineering topics.

Class Activities

In class (**week 1 of ethics sequence**), we will brainstorm ways in which even seemingly uncomplicated (politically, at least!) activities like our senior projects can have ethical implications and gray areas. We will go beyond the immediate projects to similar issues in current industry and workplace practice. I'm hoping that, as a result, we will all see more clearly how often ethics can play a role in decision making and choices in industry.

I will also show you the link to the Online Ethics Center for Engineering and Science *<onlineethics.org>*, and we will spend some time cruising this quite complex and rich site. We'll look at a couple of the hundreds of case studies (found in many places under various links and menus) and spend some time with the Lockheed Martin mini-cases ethics game (found under the pull-down menu on the home page – Engineering Practice – Corporate Setting). The goal of these initial activities is to get you thinking about the pervasiveness and importance of ethical choices in virtually all aspects of professional life. I have a number of texts on engineering and ethics issues you may wish to check out. At the end of the first class period, I will encourage you to continue exploring this website, your own experiences, and ways to shape a paper on ethics that would be meaningful to you. In class the following week, you should be prepared to discuss what actions you've taken toward these goals.

The Assignment

Monday (week 2 of ethics sequence): Come to class with written notes (to turn in if asked) on steps you've taken in the past week to further explore the ethical issues raised in class the previous week. Be prepared to talk about specific sites, links, readings, analysis, interests, etc. I'm anticipating quite a bit of time spent on the Online Ethics site. Say how you'd like to develop your findings into a written brief report, article, etc. Your contribution to this discussion and evidence of progress counts significantly toward your grade in this assignment. At this time I will provide you with the paper I wrote in response to this ethics assignment. You may use it as a model in terms of organization or way to explore ethical dilemmas or gray areas if you wish.

Monday (week 3 of ethics sequence): Each student will submit a brief report on some aspect of engineering ethics. This can be based on a number of sources, including:
- One of the topics we have discussed, providing it has sufficient substance to build on.
- A case study or ethics problem found on the Online Ethics Center web page.
- An exploration of professional codes of ethics and their application / value in real world situations.
- Or….? Some other ethics situation you find that is substantial and worthy of exploration.

Your written report should be, first and foremost, thorough and insightful. This means not waiting until the night before; if you do that, the result will be poor and will deserve a poor response (i.e., BAD grade). Take the time to read, reflect, think critically, make notes, read and think some more, and write well. Recognize that this writing assignment will be a major portion of your individual writing grade in this class. Superficial and inarticulate writing will fail, as will a paper written for a different purpose / class, or a paper that is not in your own voice (i.e., plagiarized). Your report is due **on or before our class day, week 3 of the ethics sequence:** *no* **exceptions.** Your grade will be based on class discussions and your written report; this is worth 7% of your overall grade in EDMM 4920, plus a portion of your participation grade.

Ethics in Engineering and Professional Settings – page 2

Specifics

Your ethics report (and mine) should meet the following requirements, which I suggest you check off as you complete the assignment:

- ☐ The professional standard of format that we've established in this class (review EDMM 4910 handouts!)
- ☐ At least 2 full pages (single-spaced) of ***tight, clear*** writing
- ☐ Our usual 1" margins, 11 or 12 pt. serif font, double space between non-indented paragraphs
- ☐ Our usual specific and useful title and headings
- ☐ Great organization, including introduction (and intro to sections as necessary), topic sentences, conclusion, etc.
- ☐ Absolute perfection in mechanics, grammar, sentence structure, word choice, etc.
- ☐ Not a word wasted—tight, clear, graceful, articulate phrasing throughout
- ☐ ***An original paper, for this purpose, this course, this point in time. Your thoughts, your voice.***
- ☐ Finally, be interesting, thought-provoking, well-reasoned, and demonstrate your awareness of the need for and practice of professional ethics.

Memo or Letter of Transmittal for Senior Design Report

Please include a memo or letter of transmittal with your final submitted senior design report. This document should be attached (paper clip is fine) to the outer cover of the report, rather than bound in.   Both memos and letters are typically written to convey important information (such as your report!), among other purposes. However, the letter is a more formal document than the memo; it is thus more appropriate than a memo for formal situations or when writing to someone outside of your immediate business area. You may choose which format to use; be sure not to mix the genres. This should be directed to Dr. Aller. If it's a memo, cc: your advisor(s). If a letter, write a separate letter for their report copy.

Typical MoT or LoT Contents and Format

You are writing a letter (or memo) of transmittal, which typically covers (literally and figuratively) a report or other information requested by a supervisor, outside company, etc. This letter of transmittal often serves to remind the recipient of the need for and topic(s) of the report, sum up the report's key findings and conclusions / recommendations, and convey any personal or confidential information.

The Letter / Memo

Introduction (first paragraph):
- Introductory statement (not your name)
- Purpose of the letter
- General topic of attached report (overview)
- Set tone for the letter (typically polite, positive)

Body (likely to be two paragraphs):
- Sufficient background, reason for project (brief and specific; keep it tight!)
- Key issues or findings
- Significant conclusions (may include recommendations)
- Benefits of this project

Closing:
- Summary of letter / memo
- Final thoughts on project
- Any confidential or personal thoughts; any special acknowledgements
- Graceful and appropriate close

Writing issues specific to the LoT / MoT:
- Appropriate to situation and audience
- Organization strong, and obvious to reader
- Tone / voice
- Writing style (*tight*, clear, direct, graceful, etc.)
- Grammar, mechanics, typos, etc. (make it ***perfect***!)
- Appropriate business letter or memo format (block, spacing, etc.; see examples provided throughout senior design courses)
- Appropriate address, salutation, closing, signature lines for letter; or appropriate "to, from," etc., including *specific* subject line, for memo

Overview of Senior Design *Formal Reports*

Letter or Memo of Transmittal (your choice or may depend on advisor; letter is more formal)

Cover Page

Table of Contents - 1st, 2nd, sometimes 3rd-level headings. Also include separate List of Figures and Tables – on same page or on the next page if too long to fit on same page as T of C.

Executive Summary or Abstract (in this case, Executive Summary for the final report) – a handout will be provided, with examples, for writing this summary of the report

Introduction (typically includes, although these may not be the actual headings used):

> **Overview, including benefits of project**

> **Project Definition and Objectives (these can set the organization of all subsequent sections)**

> **Project Scope and Deliverables**

Background (includes technical research review material)

Methodology / Project Plan (typically includes):

> **Narrative of Plan (this is *not* a heading, but rather the content / discussion expected here)**

> **Timeline (one-page Gantt chart in report; any expanded versions in the appendices)**

> **Budget (may be included in discussion, rather than a specific heading)**

Results (data, test results, outcomes, etc. – *what you got*)

Discussion (analysis, interpretation, etc.; sometimes combined with Results)

Conclusions (the "big picture" –the larger outcomes, the *significance* of what was done)

Recommendations (*what specific actions should be followed? –* further testing, next steps, etc.)

Acknowledgements (use equitable forms of address for everybody – Dr., Mr., Ms. – and spell correctly!)

References (use APA or other required citation method; be absolutely consistent)

Appendices (each one with a title; e.g., Appendix A: Sample Calculations) – These represent supplemental information not crucial to understanding the report.

This is a typical approach to engineering project reports. There are a number of variations on this theme, and certain managers (advisors) may prefer some adjustment. But this is the standard organization and addresses the general approach. If we substitute the summary report for the full formal version, I will provide an overview for that.   ….In fact, I did – see next page.

Overview of Senior Design *Summary Reports*

Letter or Memo of Transmittal (your choice or may depend on advisor; letter is more formal)

Cover Page

Abstract (may be helpful to executive readers; use an updated version of your SEDP blurb, on separate page, not counted in your five to seven page allotment)

Introduction (typically includes, although these should not be the actual headings used):

> **Overview, focusing on need for and benefits of project**
>
> **Project definition and objectives (these can set the organization of all subsequent sections)**

Background (much reduced, includes only minimal and relevant research material that directly supports need and value of this project)

Project Activities (steps taken that are relevant for later discussion of results, conclusions)

> **Tools, approaches, actions**
>
> **Timeline (one-page Gantt chart in text or in appendices if desired)**
>
> **Cost of activities, if important**

Project Results (data, test results, outcomes, etc. – *what you got*)

Discussion (analysis, interpretation, etc.; now combined with Results)

Conclusions (the "big picture" –the larger outcomes, the *significance* of what was done. Nothing here should come as a surprise, as you've set the scene for it in Results and Discussion.)

Recommendations (*what specific actions should be followed? –* further testing, next steps, suggestions for future senior projects, etc. Nothing here should come as a surprise, as you've set the scene for it in Results and Discussion.)

Acknowledgements (use equitable forms of address for everybody – Dr., Mr., Ms. – and spell correctly!)

References, only if needed (use APA or other required citation method; on separate page)

Appendices, only if needed (each one with a title; e.g., Appendix A: Sample Calculations) – These represent supplemental information not crucial to understanding the report.

The most important points here are: why did we do this project? (need and value); sufficient background to support need and why you did what you did; what you did (why and how); what were the results and what do they mean; big picture meaning and significance; and what specific actions should your reader / audience take as a result of you doing this project?

Co-curricular Assignments ("Lifelong Learning"):   You must complete a total of four (4) of these assignments over the two semesters of senior project.

Completing these assignments will help you to network with engineering and applied sciences students, faculty, prospective future employers, and engineering and applied sciences professionals, and to be engaged in the life of the College of Engineering and Applied Sciences (CEAS) and Western Michigan University. Complete any four of the following possible extracurricular assignments. Failure to complete the co-curricular assignments will result in an "Incomplete" grade for EDMM4920.

Opportunity #1:   Participate in an EDMMS Night event, if offered by the EDMMS department. Interact with student societies, faculty, and prospective students. Write a brief memo on who you met, what you did or learned, and/or how you might follow up, and submit the well-written memo to Dr. Betsy Aller within two weeks of the event.

Opportunity #2:   Attend a CEAS lecture that Dr. Aller brings to your attention. There will be several of these during the semester. To complete the assignment, you must sign the roll sheet, attend the entire lecture, write a response to the main points presented in the lecture, particularly anything you found interesting and/or valuable, and submit the well-written memo to Dr. Betsy Aller within two weeks of the event.

Opportunity #3:   Participate in the Career Fair, Feb. 11 from 10 to 3 in the Bernhard Center. Write a summary of your activities, including your preparation for the event and your actions during it.   Submit your well-written memo to Dr. Betsy Aller within two weeks of the event. (NB: You cannot use this event as a lifelong learning if you already submitted a LL memo for last fall's Engineering Expo.)

Opportunity #4:   Participate in the CAPM® Exam Prep Workshop, to be held this semester. This workshop prepares undergraduate students to sit for the Certified Associate Project Manager (CAPM®) certification exam offered by the Project Management Institute. Upon finishing the workshop, write about the event and what you gained from it in a memo to Dr. Betsy Aller within two weeks of the event.

Opportunity #5:   Attend and participate in a major event of a student engineering society, such as a sponsored lecture, convention, plant trip, etc. To complete the assignment, write and submit your well-written memo to Dr. Betsy Aller within two weeks of the event.

Opportunity #6:   Attend a cultural/artistic performance event, such as a concert, recital, theater performance, or art exhibit. Many of these events are free, including WMU faculty and/or student recitals and art exhibits. To complete the assignment, write a memo about your response to the performance event and submit it with proof of attendance (a play bill, concert program, etc.) within two weeks of the event. You may want to discuss with Dr. Aller prior to the event so there is no confusion regarding proof of attendance.

Opportunity #7:   Attend a WMU sponsored lecture/forum/seminar. To complete the assignment, write a memo about what you have learned from the lecture/forum/seminar, identifying the speaker and topic, and submit it with proof of attendance (a program brochure or a business card of the speaker or his/her signature, etc.) to Dr. Betsy Aller within two weeks of the event. You may want to discuss with Dr. Aller prior to the event so there is no confusion regarding proof of attendance or appropriateness of the event for this purpose.

Opportunity #8:
You may also come up with your own suggestion for an activity, provided its purpose is either to network with engineering and applied sciences professionals, to stretch beyond a purely engineering focus, or to be engaged in the life of the CEAS or WMU. Check with Dr. Aller before you make the substitution.