

From: noreply@wsu.edu
To: [curriculum.submit](#)
Subject: 472188 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Plan
Date: Monday, November 19, 2018 9:02:36 AM
Attachments: [2018.11.19.09.02.31.50.FormData.html](#)
[2018.11.19.09.02.30.34.currentCatalogFile_METM_current_requirements_from_Grad_School.docx](#)
[2018.11.19.09.02.30.34.currentCatalogFile1_Reducing_credits_to_earn_METMfrom_33_credits_to_30_credits_justification.docx](#)
[2018.11.19.09.02.30.34.currentCatalogFile2_METM_3330_credits_additional_justification.docx](#)

Patricia Elshafei has submitted a request for a major curricular change. His/her email address is: pelshafei@wsu.edu.

Requested change: Revise or Drop Graduate Plan

Degree: Master of Engineering and Technology Management

Title: Non-thesis

Requested Effective Date: Fall 2019

Revise plan requirement: Yes

Dean: Field, David - Assoc Dean - VCEA - Grad,

Chair: Zentz, Kim,

_____	_____	_____
Catalog Subcommittee Approval Date	AAC, PHSC, or GSC Approval Date	Faculty Senate Approval Date

From: [Field, Dave](#)
To: [curriculum.submit](#); [Zentz, Kim](#)
Subject: RE: 472188 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Plan
Date: Monday, November 19, 2018 10:22:25 AM

Thanks,

Dave

From: curriculum.submit@wsu.edu <curriculum.submit@wsu.edu>
Sent: Monday, November 19, 2018 9:03 AM
To: Zentz, Kim <kzentz@wsu.edu>; Field, Dave <dfield@wsu.edu>
Subject: 472188 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Plan

Zentz, Kim,

Field, David - Assoc Dean - VCEA - Grad,

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Both Chair and Dean approval is required to complete the submission process. Please indicate that you have reviewed the proposal by highlighting one of the statements below and **reply all** to this email. (curriculum.submit@wsu.edu.) [Details of major change requested can be found in the attached supplemental documentation]

1. I approve this proposal in its current form.
2. I approve this proposal with revisions. Revisions are attached.
3. I do not approve this proposal. Please return to submitter.

If you do not respond within one week, you will be sent a reminder email. If no response is received within three weeks of the submission date, the proposal will be returned to the submitter.

From: [Zentz, Kim](#)
To: [curriculum.submit](#); [Field, Dave](#)
Subject: RE: 472188 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Plan
Date: Monday, November 19, 2018 10:41:07 AM
Attachments: [image003.png](#)

I approve as highlighted below.

Kim Zentz



Kim Zentz, P.E., MEM, Director
Engineering and Technology Management
Voiland College of Engineering and Architecture
Washington State University
PO Box 1495 | CCRS 232 | Spokane, WA 99210-1495
kzentz@wsu.edu | 509-358-2030 | cell 509-995-5287
etm.wsu.edu

From: curriculum.submit@wsu.edu [mailto:curriculum.submit@wsu.edu]
Sent: Monday, November 19, 2018 9:03 AM
To: Zentz, Kim <kzentz@wsu.edu>; Field, Dave <dfield@wsu.edu>
Subject: 472188 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Plan

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Thank you for your assistance as we embark on this new process. If you have any questions or concerns, please let us know wsu.curriculum@wsu.edu.

Suzanne Lambeth, Assistant Registrar
Graduations, Curriculum, & Scheduling
Washington State University
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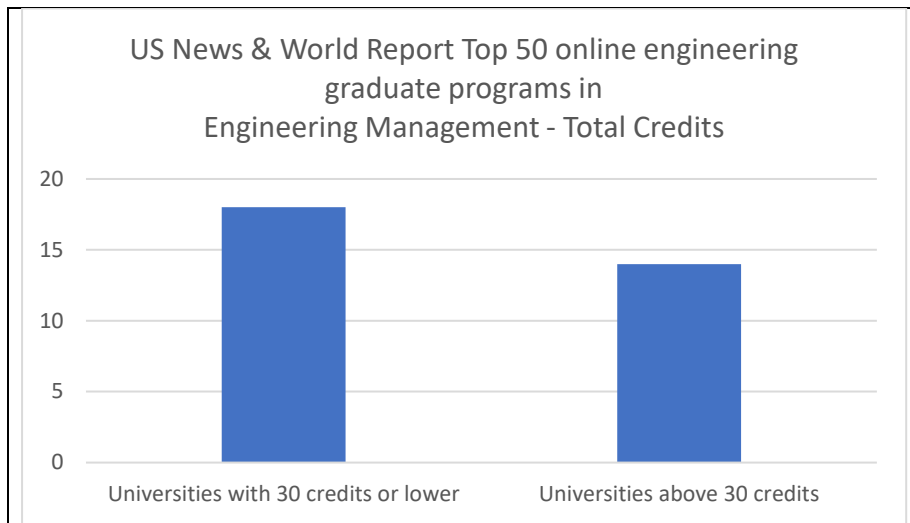
Note: Please use the attachments to this email rather than the link below to view the supporting documentation.

Reducing the number of required completion credits to earn a Masters of Engineering and Technology Management from 33 credits to 30 credits

The Masters of Engineering and Technology Management (METM) degree program requirement is being reduced from a 33-credit requirement to a 30-credit requirement to align with commonly used standards applied to online Master's degrees in the field of engineering management and online technically-focused Master's degrees within Washington State University. Our current METM program requires student to complete one course in each of six core areas (6 courses = 18 credit hours), 4 additional elective courses (12 credit hours) and a capstone EM 701 course (3 credits minimum), for a total of at least 33 credits required. In making the change to align with commonly used standards, we are preserving the core requirements of the METM program and our capstone requirement, requiring students to complete one course in each of six core areas (6 courses = 18 credit hours), 3 additional elective courses (9 credit hours) and a capstone EM 701 course (3 credits minimum), for a total of at least 30 credits required. Previously, under the 33-credit program, a full-time working professional (our most common student demographic) completing one graduate course in the Spring and the Fall of each year, would pass the five year mark to complete their METM degree. With the 30-credit program requirement, the same full-time working professional can now complete their METM within five years.

A ranking of US News & World Report online engineering graduate programs in engineering management, where the WSU Masters in Engineering and Technology Management is ranked #29, shows that the majority of these top universities require 30 course credits or lower to complete the graduate level program (see Figure 1) and students are able to complete the program well within five years. Most that require above 30 credits typically involve a Master's thesis and are geared towards the full time graduate student.

Figure 1: US News & World Report online engineering graduate programs in Engineering Management – Total number of credits



*Reference: *Best Online Graduate Engineering Program, 2018*, <https://www.usnews.com/education/online-education/engineering/search?concentration=engineering-management&program=engineering&mode=list>. Accessed 9 Nov 2018

As shown in Table 1, the majority of the WSU online technically-focused Master's degrees also require a total of 30 credits of course completion including a capstone requirement (internship, project, exam, or research) to earn a Master's degree.

Table 1: WSU Online Technical Master's Degrees: Required Program Completion Credits

WSU Online Technical Master's Degrees*	Total Credits	Graded Credits	Capstone/ Other
<i>Engineering and Technology Management</i>	<i>Current: 33 Proposed: 30</i>	<i>Current: 30 Proposed: 27</i>	<i>Current: 3 Proposed: 3</i>
Agriculture: Food, Science, and Management Plan	30	26	4
Agriculture: Plant Health Management Plan	30	26	4
Electric Power Engineering	30	27	3
Molecular Biosciences	33+	33	1-4
Software Engineering	30	30	-
Strategic Communication	30	27	3

* Reference: <https://online.wsu.edu/grad> downloaded November 9, 2018

Once implemented, this change will result in a 10% reduction in elective course load and overall program tuition cost for existing students while maintaining the core strength and high quality of the program, further enabling successful completion of the program. Going forward, this change will reduce the barriers to entry for future students, resulting in more students enrolling in our program -- translating to increased course enrollments overall.

Reducing the number of required completion credits to earn a Masters of Engineering and Technology Management from 33 credits to 30 credits was approved by a unanimous vote of department faculty at our Fall 2018 program meeting.

EM 565: Adding Introduction to Systems Management as a core course for the METM Degree

E M 565 Introduction to Systems Management is being added as a core course for the METM degree under the core area of Managing Projects, one of six core areas in the Engineering and Technology Management Master's Degree curriculum. The decision to move E M 565 from an elective to a core course in the program was two-fold. First, under separate justification E M 520 Contract Project Management is being removed as a core course from the Managing Projects area. Second, a systems approach to project management has become a critical skill in managing projects. That is, project management and systems management are interrelated skills that are critical for managing complex projects as systems, as well as managing projects dealing with complex systems, driving the need for a course which deals with both aspects. And finally, the E M 565 Introduction to Systems Management course supports the technical focus of the Engineering and Technology management program through a systems engineering approach to project management. Adding EM 565 as a core course in the Managing Projects area was approved by a unanimous vote of department faculty at our Fall 2018 program meeting.

EM 520: Dropping Contract Project Management as a core course for the METM Degree

EM 520 Contract Project Management was one of a set of courses created to service a request to offer a certificate and degree path for construction and civil engineers interested in advancing their knowledge and credentials in the construction management area. EM 520 was originally included as a Managing Projects core option for the ETM master's degree. This allowed students to earn a certificate as well as being able to count the course towards meeting a core degree requirement. However, having EM 520 as a core selective has created some negative feedback in our program/course assessment process as some non-construction focused students who wanted to take EM 564 but, due to a schedule conflict, opted to take EM 520 which, while an excellent course, didn't meet the expectations of those non-construction oriented students. Construction focused students will still have the option of taking EM 520 as an elective. EM 565, Introduction to Systems Management will be added to the Managing Projects core in a separate change request to provide a more distinct Project Management core option. Removing EM 520 as a core course was approved by a unanimous vote of department faculty at our Fall 2018 program meeting.

Justification for moving from a 33 credit requirement to a 30 credit requirement for the ETM Master's degree-

Reference: *Best Online Graduate Engineering Program*, 2018,
<https://www.usnews.com/education/online-education/engineering/search?concentration=engineering-management&program=engineering&mode=list>. Accessed 9 Nov 2018.

#1 Columbia U – 36 credits, MS management science and engineering, 3 semesters that can be completed in a single calendar year, no capstone or thesis, <https://mse.ieor.columbia.edu/mse-curriculum-class-starting-fall-2018>

#2 University of Southern California – 30 credits, MS, no capstone or thesis,
(http://catalogue.usc.edu/preview_program.php?catoid=8&poid=7792&returnto=2401)

#2 UCLA – 36 credits, MS, 9 courses, 3 years, comprehensive exam,
<https://www.msol.ucla.edu/engineering-management/>

#4 Penn State – 33, MEM, finish in 2 years, 3 semester offering, capstone
<https://www.worldcampus.psu.edu/degrees-and-certificates/engineering-management-masters/courses>

#5 Purdue – 33 credits, MS, entirely customizable, \$3,000 per credit @business school,
(<https://engineering.purdue.edu/ProEd/programs/masters-degrees/interdisciplinary-engineering/engineering-management-leadership>)

#5 University of Michigan – 35 credit, MS, capstone,
<https://umdearborn.edu/cecs/departments/industrial-and-manufacturing-systems-engineering/graduate-programs/ms-engineering-management>

#7 University of Madison Wisconsin – 30 credits, MEM, 2-3 years, no thesis or capstone, \$1,600 per credit, <https://epd.wisc.edu/online-degree/master-of-engineering-management/>

#9 North Carolina State U – 30 credits, Master of Engineering with EM concentration, no thesis or capstone, <https://www.engr.ncsu.edu/academics/grad/degrees/master-of-engineering/>)

#11 Arizona State University – 30 credits, MEM, 15 weeks per class, 10 classes, capstone \$16,830 per year, <https://asuonline.asu.edu/online-degree-programs/graduate/master-engineering-area-study-engineering-management>

#13 NY University – 33, credits, MS Management of Technology, capstone,
<https://engineering.nyu.edu/academics/programs/management-technology-ms-online>

#13 University of Illinois-Urbana – 40 credits, Technology Management, internship,
<https://business.illinois.edu/mstm/current-students/curriculum/>

#16 Texas Tech U – 30 credits, MS, no thesis or capstone,
<http://www.depts.ttu.edu/coe/distance/msem.php>

#19 John Hopkins University – 30 credits, MEM, no thesis or capstone,
https://ep.jhu.edu/programs-and-courses/programs/engineering-management#quickset-program_pages_content_2

#21 University of South Florida – 30 credits, MS, no thesis or capstone, \$913,
<http://www.grad.usf.edu/programs/programinfomation.php?pcode=EMAEN-M.S.E.M.>

#23 Missouri S&T – 30 credits, MS, 2 years, no thesis or capstone,
<http://dce.mst.edu/credit/degrees/engmgmt/index.html> RFI

#23 Stevens – 30 credits, MEM, 2 years, no thesis or capstone, <https://www.stevens.edu/school-systems-enterprises/masters-degree-programs/engineering-management/curriculum-overview>

#26 GWU – 36 credits, MS, <https://engineering.gwu.edu/online-programs/ms-in-engineering-management/curriculum/>

#26 Oregon State University – 45 credits (4 credit courses), IE degree with MEM option, 2 years, no thesis or capstone, \$593 per credit, <https://ecampus.oregonstate.edu/online-degrees/graduate/engineering/management/curriculum.htm>)

#26 University of North Carolina – Charlotte – 30 units, MS, 2 years, thesis or capstone, \$960 per credit

#29 Colorado State University – 30 credits, MEM, 2 years, no thesis or capstone, \$1085 per credit, <https://www.online.colostate.edu/degrees/engineering-management/>

#29 Drexel – 45 credits, MS, 10 week quarters per year, capstone,
<https://online.drexel.edu/online-degrees/engineering-degrees/ms-egmt/index.aspx>

#29 University of Nebraska – Lincoln – 30 credits, MEM, accelerated 8 week sessions, no thesis or capstone, <https://engineering.unl.edu/graduate-programs/mem-course-curriculum/>

#29 WSU – 33 credits, MEM, capstone, etm.wsu.edu

#33 KSU – 30, credits, MEM, no thesis or capstone, <https://global.k-state.edu/engineering/engineering-management/curriculum/>

University of Arizona – 30 credits, MS, capstone project,
<https://online.engineering.arizona.edu/online-programs/engineering-management/master-of-engineering-management/>

Ohio University – 30 credits, MEM, project, <https://onlinemasters.ohio.edu/masters-engineering-management/>

Duke University – 30, MEM, residency, <https://memp.pratt.duke.edu/distance/requirements>

ODU – 31, MEM, \$568, capstone, <https://online.odu.edu/programs/engineering-management-masters-degree-online>

University of Tennessee – EM concentration in Masters ISE, <https://ise.utk.edu/graduate/ms-degree-requirements/engineering-management-concentration/>

Lehigh University – 30, MEM, no capstone or thesis, <https://distance.lehigh.edu/online-programs/masters-degree-programs/online-management-science-and-engineering-masters>

University of Tennessee-Chatnooga – 33, MS, graduate internship,
http://catalog.utc.edu/preview_program.php?catoid=24&poid=4235&returnto=827

University of Colorado – 30, MEM, exam, <https://www.colorado.edu/emp/admissions-requirements>

EXCERPTED FROM GRM DEGREE REQUIREMENTS

Engineering and Technology Management METM; Global (Non-Thesis):

- Managing Organizations and People: one course minimum:
 - E_M 501
 - E_M 522
- Managing Financial Resources: one course minimum:
 - E_M 505
 - E_M 545
- Managing with Analytical Methods: one course minimum:
 - ~~E_M 460~~ or E_M 560
 - E_M 540
- Managing Projects: one course minimum:
 - ~~E_M 520~~
 - E M 565
 - E_M 564
- Managing Variability: one course minimum:
 - E_M 503
 - E_M 580
 - E_M 585
- Managing Strategy: one course minimum:
 - E_M 526
 - E_M 575
 - E_M 591
- Electives: ~~four~~ three courses chosen from the following, and not already used to satisfy the above core requirements:
 - E_M 501, E_M 503, E_M 505, E_M 508, E_M 520, E_M 522, E_M 524, E_M 526, E_M 530, E_M 534, E_M 538, E_M 540, E_M 545, E_M 555, E_M 560, E_M 564, E_M 565, E_M 566, E_M 567, E_M 568, E M 569, E_M 570, E_M 575, E_M 580, E_M 585, E_M 590, E_M 591, E_M 595, E_M 596
- Capstone: 3 credits minimum:
 - E_E 701
- Total Graded Credits: ~~30~~ 27 credits minimum
- Total Credits: ~~30-33~~ credits minimum

Applicable Graduate School Requirements:

- Graded Credits: 27 credits minimum
 - Students may use a maximum of 9 credits of undergraduate coursework (300-400)
- Capstone: 3 credits minimum
 - E_M 701
- Total Credits: 30 minimum

EM565: Introduction to Systems Management Syllabus

Instructor: Dr. Alice F. Squires

Email: alice.squires@wsu.edu

Communication Methods: We use tools within the Blackboard Learn online classroom (<http://learn.wsu.edu>), including Blackboard Collaborate (for real-time weekly lectures), online discussions (for homework), and Course Email (sends to @wsu.edu email). Students must log into the course to use these methods. However, students also need to check their WSU assigned email (@wsu.edu) daily for communications from the Engineering Technology Management (ETM) department, your faculty advisor, course instructors, and Blackboard Learn.

Prerequisites: Graduate Standing

Course Description

This course integrates project management and systems engineering management in the development, manufacture, and operation of complex systems. Complex systems, encumbered with schedule and cost constraints while pushing state of the art technology, present a challenge to today's managers and require a systems approach to project planning, leading, organizing, directing, and monitoring. The course is designed to assist engineering leaders and managers, systems engineers and architects, technical project or program managers, and hardware, software, electrical, mechanical and manufacturing engineers with projects involving complex system planning and development. The course includes case studies to relate concepts to real world practice and demonstrate how projects can succeed with a formalized systemic approach to project and systems engineering management. This course is a core Managing Projects course in the ETM master's degree, a required course for the systems engineering management graduate certificate, and is available for continuing education.

Course Objectives

This course teaches the fundamental elements and concepts of project management and systems engineering management. Its specific objectives are:

1. To provide a general understanding of the interdependent relationships between project planning, leading, organizing, directing, and monitoring, and system development, build, operation, and sustainment;
2. To develop key concepts and principles usable by technical managers to plan a complex project across the systems life cycle;
3. To provide some practice using analytical tools to plan for the development of an affordable total system solution that addresses the right problem;
4. To clarify, improve and broaden one's personal philosophy of project management, systems concepts, system design and development, requirements management, change management, and engineering ethics;
5. To strengthen the students' communication and research abilities by exploring current societal needs addressable with a system solution;

EM565: Introduction to Systems Management Syllabus

6. To provide the student with opportunities to utilize critical thinking skills to analyze and solve complex problems.

Link of Objectives to Graded Items:

Objective #	Measured by:
1	Class Activities and Online Discussions, Exams
2	Final Individual Project
3	Case Analyses, Exams
4	Class Activities and Online Discussions, Exams
5	Team Project, Final Individual Project
6	Case Analyses, Team Project, Final Individual Project, Exams

Student Learning Outcomes:

Upon satisfactory completion of the course, the learner should be able to:

- Understand the interdisciplinary processes critical to complex system development including the integrative management of projects and systems, situation analysis, team building and team interactions, requirements management and allocation, system architecture, feasibility analysis, logistics and maintenance support concepts, life cycle cost analysis, systems synthesis, analysis, and design optimization, design integration, test and evaluation, production, operations, sustainment, and system retirement and disposal.
- Identify a current deficiency, problem, or opportunity that can be addressed with the design of a system solution; develop a clear succinct need statement for the system in the domain and language of the stakeholder; and complete the system concept selection process.
- Define a comprehensive set of system design requirements for the system solution that span the entire system life cycle and incorporate the essential design engineering disciplines.
- Understand how to facilitate design and supplier review and evaluation through formal design reviews for the system requirements, conceptual system/system design, preliminary system design, equipment/software design, and detailed/critical design and development.
- Develop a Project Management Plan (PMP) and Systems Engineering Management Plan (SEMP) for a complex system that includes cost, schedule and technical considerations, project and system requirements, integration of engineering specialties, risk management, change management, and management of outsourcing and global relationships.
- Understand how to build a successful systems focused organizational culture.

EM565: Introduction to Systems Management Syllabus

Approaches to Achieve Learning Outcomes:

- Readings from the Eisner textbook, the Guide to the Systems Engineering Body of Knowledge (sebokwiki.org), the United Nations' 2030 Agenda for Sustainable Development, and additional instructor provided readings provide guidance and formal examples of how organizations deal with various project and systems engineering management issues.
- Class Activities and Online Discussions reflect on the assigned work and allow students to explore how experienced engineering managers tailor their leadership and management toolkit based on the systems context.
- Case study analyses demonstrate the student's ability to assess the application of project and systems engineering management approaches and tools to various situations and capture the student's reflection on readings and case examples. ***These assignments are submitted by students individually.***
- A group (or individual) research project applies concepts learned in the course to the development of an abbreviated Project Management Plan (PMP) presentation. **There is one team (or individual) presentation required during the semester.** The team defines a project in support of the 2030 Agenda for Sustainable Development published by the United Nations, and develops an initial Project Management Plan that supports the project, incorporating lessons learned from the readings, discussions, assignments, and independent research. ***The team assignment is submitted by one designated (by the team) member of the team.***
- The development of a Systems Engineering Management Plan (SEMP) demonstrates the student's ability to plan and manage a complex systems project and the student's mastery of the course concepts. ***This assignment is submitted by students individually but can be built for the project defined for the team project.***

Course Approach

Class meets Wednesdays from 5:15pm to 7:45pm Pacific time in Blackboard Collaborate using the link provided in the Blackboard Learn online classroom. Class is held according to the WSU Academic Calendar (no real-time class on WSU holidays or break week). Course Content is posted to appropriately labeled sections of the online classroom. Class participation, online and in-class discussions, homework, quizzes, and team and individual assignments successively build capability and confidence in the course material.

To convey course content the instructor:

- Facilitates "live" class sessions that include lectures, discussions, and other class activities that are recorded for on demand access;

EM565: Introduction to Systems Management Syllabus

- Posts recordings, presented slides, and whiteboards from class sessions;
- Provides additional supplemental material and references as feasible which may include external web links, standards documents, handbooks and reference guides, pertinent articles, course content recordings created outside of the 'live' class, additional written course content guidance, etc.;
- Assigns reading, online discussion homework topics, and open-book exams;
- Assigns individual and team assignments;
- Responds to student questions in a timely manner; and
- Provides timely and detailed feedback on assignments.

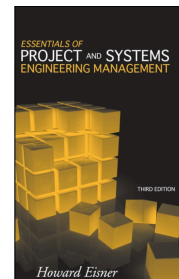
Students are required to perform the following by the due date and time:

- Attend and participate in "live" class sessions OR listen to the recorded class session;
- Complete in-class activities either in-class or posted to the online discussion after reviewing the recorded session;
- Complete assigned reading, and study and review material;
- Post to and respond to other students in the online discussions;
- Complete open-book exams;
- Meet with team members to discuss content and work on team work;
- Complete individual and team assignments and review feedback;
- Participate in a live or recorded project presentation; and
- Demonstrate mastery of the course by completing a final individual project.

See the Grading Policy section for more detail including late assignment policy. In the case of an unexpected life event, please contact the instructor.

Required Textbook

- Howard Eisner, "Essentials of Project and Systems Engineering Management", 3rd Edition, John Wiley & Sons, ISBN: 978-0-470-12933-3. March 2008. 512 pages.



Other Resources Used in the Class

- Systems Engineering Body of Knowledge wiki: www.sebokwiki.org
- United Nations' "Transforming our world: the 2030 Agenda for Sustainable Development", downloadable from <https://sustainabledevelopment.un.org/post2015/transformingourworld>
- "Visualizing Project Management" by Kevin Forsberg, Hal Mooz, Howard Cotterman, 3rd Edition (2005), downloadable from http://dbmanagement.info/Books/MIX/Visualizing_Project_Management_Models_And_Frameworks_For_Mastering_Complex_Systems.pdf
- Student Guide to Academic Integrity at WSU, see: <https://conduct.wsu.edu>

EM565: Introduction to Systems Management Syllabus

- Guidance for avoiding plagiarism, see: <http://www.wsulibs.wsu.edu/library-instruction/plagiarism/how-avoid-it>

Office Hours (by Request)

I check my WSU email nearly every day; and meet with individuals or teams, by request, at pre-agreed to times. I encourage students to be proactive in getting questions answered early through the many available methods.

Tips for Being Successful in an Online Program

For each hour of lecture equivalent, students should expect to have 3 - 4 hours of work outside class. This equates to 7 - 10 hours per class. For a twice a week condensed summer class, the time demands are nearly double. The most important step for being successful in an online graduate course is to schedule at least the required number of hours per week for class work – spread over multiple days. Please block out this time on your calendar. This time is needed for completing the assigned reading, meeting with team members, completing open-book online tests, performing research, completing homework, participating in online discussions, completing individual and team assignments and reviewing feedback. Taking the class online saves commute time but it's up to the student to dedicate up to 150 hours outside of class time per graduate course, to be successful. Other tips include learning from each other; keeping an open mind about and becoming an advocate for online learning; and building a support structure of folks who help you achieve your learning goals.

In-Class Activity

Students earn up to 1 point per class session for completing the in-class activity for each of the 15 class sessions, including “recorded only” sessions (as applicable). Students participate in “live” class sessions according to the course schedule or listen to the archived lectures of the “live” class sessions. Class sessions consist of a brief discussion of the text materials and additional material from real-life experience or other references, and students complete an in-class activity during the class session. Students attending the “live” class session earn credit for the in-class activity if completed during the “live” class. Students submit class activities not completed during the appropriate time in the class session to the appropriate discussion thread in the BB Learn online classroom to earn up to 1 point credit for the in-class activity for that class. Students earn the following points per class:

- 0 points for in-class activities that are not completed or are not substantive in nature, completed either during the “live” class or posted to the online discussion thread;
- 1 point for completing substantive in-class activities either during the “live” class or posted to the online discussion thread by the due date.

Students should complete assigned reading in advance of “live” class session.

EM565: Introduction to Systems Management Syllabus

Online Discussions: Homework Topic

Students earn up to 1 point per class for participation in the online discussion topic assigned for that class for the first 14 class sessions. Students post a response to the question posted in order to view responses posted by other students; students then read through the discussion as it develops and post one substantive response to another student's posting. Students earn the following points per class discussion:

- 0 points for no responses to the assigned discussion question and no response to another student's posting by the due date;
- 0.5 points for posting a substantive yet concise response to the question posted by the due date;
- 1 point for posting two substantive responses – one with responses to the assigned discussion question and one to another student's response, by the due date.

Please review assigned reading and attend or listen to the recording of the related class session in advance of responding to the assigned discussion question. Due to class size, please post concise but thoughtful responses to each question and only post one response to another student in each discussion.

Open-Book Online Exams

Students complete open-book online exams that cover the course content. Please complete the reading, attend or review the class sessions and corresponding recorded lectures, and complete other assigned work as applicable, before you complete the related exam. Exams are evaluations of the learners' overall understanding of the principles that support the knowledge areas covered in the course. The schedule for the exams is given in the Course Schedule.

Students earn up to 5 points per exam; exams are graded as the best 4 out of 5 exams for up to 20 total points earned. Questions for exams submitted on time are marked either correct or incorrect with feedback provided, leaving it up to the student to research the correct response for those questions marked incorrect. Exams contain multiple-choice, true/false, multiple answer, fill in the blank, matching, and other types of questions.

Exams are due by midnight Pacific time on the due date. Exams cannot be opened after the due date and time, and incomplete (not submitted) exams are not accepted after the due date and time (unless prior arrangements are made).

Individual and Team Assignments

Individual and team assignments successively build capability and confidence in the course material. Assignment should be error-free and visually effective in communicating the intended message. Work submitted in this course should satisfy general professional expectations as well as be appropriate for the specific purpose and audience for which the communication is intended. Quality of work is reflected in the assignment scores. Ensure that proper grammar, sentence

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structure, and material citations are included for maximum point consideration. Note that Wikipedia may not be a suitable reference source due to the editable nature of the material found there that raises concerns about veracity and validity of content; therefore, please do not cite or list Wikipedia in your references for any assignments in the class.

Assignments are due by midnight Pacific time the night before the next regularly scheduled day of class, on the due date. Instructor feedback and grades are posted by midnight up to a week later.

Team Presentation

Students earn up to 10 points for a team presentation that presents a Project Management Plan (PMP) for a project that supports the United Nations' (UN) "Transforming our world: the 2030 Agenda for Sustainable Development" goals. The team researches and defines a specific project, identifies the stakeholders and their needs, defines the system context, and develops an initial abbreviated project management plan, incorporating lessons learned from the readings, discussions, assignments, and independent research.

The UN global goals address large complex issues that may be overwhelming; please do not try to tackle a broad complex problem; instead select a small well-defined and bounded project that supports the overall goals. You are not trying to solve world hunger or achieve sustainable world peace. The intent of the classroom assignment is to apply project management concepts and principles (and later systems engineering management in your individual project) to develop a PMP for a project that supports the overall problem space. Typical PMP outlines are provided for guidance and should be tailored to the selected project. Focus on defining a bounded project (with a specific start and end) that will help make progress in addressing a real but 'reasonable' problem within the problem space domain. That is, please be sure to properly define the problem domain to be a narrow problem in the problem space. For example, you should pick a specific topic area within a goal, and then apply to a specific region of the world such as a small community, and develop a real-life PMP for a project that addresses a real problem, but can be reasonably completed within the timespan of the course.

The team assignment is augmented with research of literature from peer-reviewed and credible sources such as those found in the WSU library (<http://griffin.wsu.edu>). The team presentation is due by midnight PST the night before the first scheduled team presentation. The team presentation takes place during the class session shown on the Course Schedule. Instructor feedback and grades are posted by midnight PST up to one week later after all class presentations are complete and the self and team assessments are turned in.

Teams are required to provide a set of "quiz" questions (one per team member) based on the information presented and ask them to the class following the completion of their presentation. Quiz questions must include the correct answer on a separate slide from the question itself. Additional detailed requirements for the team assignment are posted in the Assignment area in the online course.

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Team assignments are submitted by the team lead, or team lead's delegate, by clicking on the Assignment title and proceeding through the submission process.

Effective time management is crucial to ensure that teams complete the parts of the team assignment on time and to keep the course on schedule for all participants. To facilitate this, each team should meet weekly once the teams are formed. Each team selects a team leader to: a) post the initial team plan, b) arrange team meetings and facilitate team discussions ensuring participation from each member, c) verify that the team's assignment is accurate and complete, and d) post the assignment by the required time. Once teams are assigned, the team leader posts the team's overall plan including the names of the team members, the topics selected for the team project, and the plan that the team has agreed on for working together in the course (please include planned meeting method and frequency) to the appropriate Discussion Forum. Although there is a team lead, all team members are expected to contribute equally to the success of the team. Changes made to the team's leader or plan during the course are posted as updates to the team's plan. Teams are provided a team discussion forum and Blackboard Collaborate team room for their private use.

Self and Team Assessments

Students earn up to 1 point for completing the self/team assessment after the team presentation is complete. To promote full team member participation, students assess the contribution of members of the team, including themselves, prior to the final team project grading. While team members usually receive the same grade, team members may earn a lower grade due to a lower contribution to the team's work. The self and team assessment is found in the Assignment area in the online course. Assignments are submitted in the course by clicking on the Assignment title and proceeding through the submission process.

Individual Case Analyses

Students complete individual case analyses on four (4) assigned cases provided by the instructor. For each case analysis, students include a title page with a title, name, date, the case study being analyzed, and the academic integrity pledge. The case study analyses are divided into three parts that students are required to complete:

- **Part I: Case Synopsis:** Provide a concise relevant summary of the case that includes a summary of the problem, the analysis process, and the analysis results. Limit the synopsis to 350 words.
- **Part II: Q&A:** Discuss and answer the assigned questions, submitted **as numbered Q&A**. Limit each question response to 250 words (not including graphs, charts, equations, tables, etc.) unless a different word limit is specifically noted.
- **Part III: Student Recommendation and Experience:** Provide a student opinion of the case that demonstrates mature understanding of the situation; discuss what you agree and disagree with, include one or more

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recommendations for what needs to be done going forward, and relate the situation described to similar work or community experience, going beyond the obvious and digger deeper into the implications of the case. Limit the student opinion to 500 words (not including graphs, charts, equations, tables, etc.).

Students earn up to 5 points per case study analysis for up to 20 total points earned. Assignments are submitted in the course by clicking on the Assignment title and proceeding through the submission process.

Individual Final Project: SEMP

Students earn up to 20 points on their final SEMP project which is a written paper. For the final individual project for this course, students build on their team assignment work, or select a new project of their choice (and repeat the work needed to develop the same project management artifacts developed for the team presentation) and follow through the system process to complete an abbreviated System Engineering Management Plan (SEMP) that is successively built throughout the course.

Students apply weekly lessons and exercises to their project, documenting as they go, while also incorporating research outside of the class in the form of peer-reviewed literature and other credible sources such as those found in the Washington State University (WSU) library (<http://griffin.wsu.edu>), as well as input from subject matter experts. The paper should not contain company proprietary information. Typical outlines are provided for guidance. The outline should be tailored to the project selected. Students should incorporate the work completed and feedback received for the team presentation (if applicable) and in the online or class discussions, into their assignment. Detailed requirements for the assignment are posted in the assignment description found in the Assignment area in the online course. Assignments are submitted in the course by clicking on the Assignment title and proceeding through the submission process.

Library Access

All students enrolled in WSU distance courses can use the WSU Libraries online databases at <http://griffin.wsu.edu>. Login with your WSU username and password when prompted (on campus users may not be prompted to login). Students may also receive reference and research assistance from the online university services and borrow books and other material and receive photocopies of journal articles.

Information Technology (IT) Help Desk

For any technical issues with Blackboard Learn or Blackboard Collaborate please contact support at wsonline.support@wsu.edu or call 509-335-4320. To receive notifications about Blackboard outages please visit <http://lists.wsu.edu/join.php> and select the Blackboard-alerts option from the dropdown menu.

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Course Schedule

#	Class Date	Reading Before Class	Class Topics	Assigned – due dates in BB Learn
1	Jan 9		Introduction to Course; PMP Outline, SEMP Outline	- Online Disc: Topic 1 - In-class activity 1
2	Jan 16	Eisner: Ch 1 and 2	Ch 1: Systems, Projects, and Management; Ch 2: Overview of Essentials	- Online Disc: Topic 2 - In-class activity 2
3	Jan 23	Eisner: Ch 3	Ch 3: The Project Plan	- Online Disc: Topic 3 - In-class activity 3 - Exam 1: Sessions 1 - 3
4	Jan 30	Eisner: Ch 4	Ch 4: Schedule, Cost, and Situation Analysis	- Online Disc: Topic 4 - In-class activity 4 - Case Analysis 1
5	Feb 6	Eisner: Ch 5	Ch 5: The Project Manager and Leadership	- Teams Charters posted - Online Disc: Topic 5 - In-class activity 5
6	Feb 13	Eisner: Ch 6	Ch 6: Team Building and Team Interactions	- Online Disc: Topic 6 - In-class activity 6 - Exam 2: Sessions 4 - 6
7	Feb 20	Eisner: Ch 7	Ch 7: The Thirty Elements of Systems Engineering	- Online Disc: Topic 7 - In-class activity 7 - Case Analysis 2
8	Feb 27	Eisner: Ch 8	Ch 8: Requirements Analysis and Allocation	- Online Disc: Topic 8 - In-class activity 8
9	Mar 6	Eisner: Ch 9	Ch 9: System Architecting Principles	- Online Disc: Topic 9 - In-class activity 9 - Exam 3: Sessions 7 - 9
		Mar 11 – Mar 15	SPRING BREAK	
10	Mar 20	Eisner: Ch 10	Ch 10: Software Engineering	- Online Disc: Topic 10 - In-class activity 10 - Case Analysis 3
11	Mar 27	Eisner: Ch 11	Ch 11: Selected Quantitative Relationships	- Online Disc: Topic 11 - In-class activity 11 - Team Presentation due 4/2
12	Apr 3		Team Project Presentations with Qs	- Online Disc: Topic 12 - In-class activity 12 - Exam 4: Sessions 10 - 12
13	Apr 10	Eisner: Ch 12	Ch 12: Systems/Software Engineering and Project Management Trends	- Online Disc: Topic 13 - In-class activity 13 - Case Analysis 4
14	Apr 17	Eisner: Ch 13	Ch 13: Selected New Perspectives	- Online Disc: Topic 14 - In-class activity 14 - Individual SEMP due 4/23
15	Apr 24	Eisner: Ch 14	Ch 14: Integrative Management	- In-class activity 15
	May 1		FINALS, No Class	- Exam 5: Sessions 13 - 15

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Grading Distribution

Additional details are found in the online course. Grading distribution is:

1. In-Class Activity (15)	15%
2. Online Discussions (14) plus Self/Team Assess(1)	15%
3. Online Open-Book Exams (best 4 of 5)	20%
4. Individual Case Analyses (4)	20%
5. Team PMP Presentation, Quiz Qs (1)	10%
6. Final Individual SEMP (can be based on Team Topic) (1)	20%
TOTAL	100%

Please note that assignments in this class may be submitted to a web-based anti-plagiarism system for an evaluation of their originality.

Grading Policy

Final course grades are based on the student's performance as follows:

A	94 - 100	C	73.5 - 77.4
A-	90 - 93.9	C-	70 - 73.4
B+	87.5 - 89.9	D+	67.5 - 69.9
B	83.5 - 87.4	D	63.5 - 67.4
B-	80 - 83.4	D-	60 - 63.4
C+	77.5 - 79.9	F	0 - 59.9

No credit is earned for late assignments unless explicitly stated as policy in the online classroom or in cases where the student has arranged an extension ahead of time with me (and that is quite possible, I am flexible with everyone's challenging circumstance and time constraints); with rare exceptions based on individual circumstances (inability to communicate with me ahead of time based on an emergency, for example).

Incomplete Policy

An incomplete (I) grade is given to a student who, for reasons beyond the student's control, is unable to complete the course requirements within the enrolled semester. An incomplete will only be considered if at least 50% of point assignments required in the course are completed and submitted by the end of the enrolled semester. The incomplete must be cleared and completed within one year following the semester in which the "I" grade was assigned. If the incomplete is not completed and a grade change is not submitted by the deadline, the grade will automatically change to an "F". A student may not simply repeat the course to remove an Incomplete grade. A student must have a written permission from their faculty advisor to register for future semesters if the student has two or more Incomplete grades on their transcripts. A student will not be allowed to graduate with an Incomplete grade on their transcript.

A student who desires an Incomplete grade must:

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- (1) Notify the professor in writing,
- (2) Provide sufficient reason for the incomplete request,
- (3) Complete and submit an Incomplete Grade Agreement Form found at <http://registrar.wsu.edu/ropubs>.

Copyright Notice

The content of this program and the video transmissions of the classes are the property of Washington State University and are to be viewed and used only by persons currently enrolled in this course. The materials provided in this program are copyrighted and unauthorized duplication is not allowed without permission of the copyright holders. Any other use requires the express written consent of the Instructor.

Professional Oral and Written Presentations

The WSU ETM Master's degree is a professional graduate program; student work should be presented neatly and with correct English spelling, grammar and punctuation. There are numerous software packages available to help students. Also, the WSU Writing Program (writingprogram.wsu.edu or 509-335-7959 (undergraduates)/509-335-3413(graduates)) can assist with both writing and proactive assignment design that minimizes academic dishonesty.

American Disability Act (ADA) Accommodations

Reasonable accommodations are available in online classes for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center or Disability Services for your home campus to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center or Disability Services. For more information contact a Disability Specialist on your home campus. **Students are responsible for initiating requests for reasonable accommodations and services that they need.**

Requesting Reasonable Accommodations

Students with identified disabilities should contact the Access Center before the semester that they plan to attend and initiate the accommodations process. Accommodations are unique for each individual and some require a significant amount of time to prepare for, so it is essential that students notify the Access Center as far in advance as possible. Students with a disability that is identified during the semester should contact the Access Center as soon as possible to arrange for an appointment and a review of their documentation by an Access advisor. Contact information for the Access Center at each campus can be found at the following websites:

- **Pullman or WSU Online:** 509-335-3417, Washington Building 217; website: <http://accesscenter.wsu.edu>, email: Access.Center@wsu.edu
- **Spokane:** <https://spokane.wsu.edu/studentaffairs/disability-resources/>
- **Tri-Cities:** <http://www.tricity.wsu.edu/disability/>

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- **Vancouver:** 360-546-9138
<http://studentaffairs.vancouver.wsu.edu/student-resource-center/disability-services>

All students requesting reasonable accommodation must meet with the instructor prior to or during the first week of the course to review all proposed accommodations in relation to course content and requirements. Exceptions to this timeframe will be granted only upon a showing of good cause.

Academic Honesty

Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU's Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) will earn a zero on the assignment; further consequences range from failing the course, being placed on academic probation, or being dismissed from WSU. Students will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Student Conduct. Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26- 010(3). Students need to read and understand all of the definitions of cheating: <http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010>. If a student has any questions about what is and is not allowed in this course, ask the course instructor before proceeding.

If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at conduct.wsu.edu.

Examples of issues include: not quoting/citing directly copied and pasted text; collaborating on individual work (collaborate on team work only); presenting another person's work as your own; rephrasing another person's work without citing; or turning in work where a majority is someone else's work even when properly quoted and cited.

ETM requires students to including the following statement on exams and other course assignments as required by the instructor:

I commit myself to Washington State University's high standards to uphold academic honesty and scholarly values as established by the [WSU's Standards of Conduct](#). I affirm that I have not given or received any unauthorized assistance on this assignment/ examination, that the work product presented here is the work of the author(s) [myself or all team members listed], and that all materials from other sources (including books, articles, Internet, or other media), whether quoted or paraphrased, have been properly cited.

Typing or electronically signing my name above serves as my signature

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WSU Safety Statement (if/when on campus)

WSU is committed to maintaining a safe environment for its faculty, staff, and students. Safety is the responsibility of every member of the campus community and individuals should know the appropriate actions to take when an emergency arises. In support of our commitment to the safety of the campus community the University has developed a Campus Safety Plan, <http://safetyplan.wsu.edu>. Before visiting campus, please also visit the University emergency management web site at <http://oem.wsu.edu> to become familiar with the information provided.

Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the “Alert, Assess, Act,” protocol for all types of emergencies and the “Run, Hide, Fight” response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able). Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI’s Run, Hide, Fight video (see: <https://oem.wsu.edu/emergency-procedures/active-shooter/>) and visit the WSU safety portal: <https://oem.wsu.edu/about-us/>.

Washington State University Student Grievance Process

If a WSU Online student has a complaint or problem, the University offers several remedies as outlined below.

See: <http://online.wsu.edu/nonResidentComplaintProcess.aspx>

Academic Complaint Procedures (Academic Rule 1 04)

Students having complaints about instruction or grading should refer them first to the instructor. If the complaint is not resolved, then the student may refer the complaint in writing to the chairperson of the department in which the course is offered by the end of the last day of the following semester (excluding summer term). The chair's decision shall be rendered within 20 business days. After the chair's decision, the student or the instructor may appeal to the Dean's Office. Complaints must be presented in writing to the dean within 20 business days of the chair's decision. The written statement should describe the complaint, indicate how it affects the individual or unit, and include the remedy sought from the dean. The decision of the dean is the final step and shall be made within 20 business days. The University Ombudsman is available at any stage for advice or assistance in resolving academic complaints. At the branch campuses, the procedure is identical except that the academic area coordinator shall substitute for the department chair and the campus dean shall substitute for the college dean.

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Policy Prohibiting Discrimination and Sexual Harassment (*Faculty Manual*, p. 30).

This policy expresses WSU's commitment to maintaining an environment free from discrimination, including sexual harassment. This policy applies to all students, faculty, staff, or others having an association with the University. The faculty manual is located at:

http://facsen.wsu.edu/faculty_manual/

Additional information may be found in the Code WAC 504-26-220, -222, and -227. In addition, complaints about discrimination/sexual harassment can be directed to WSU's Office for Equal Opportunity: <http://chr.wsu.edu>

WSU is accredited by the Commission on Colleges of the Northwest Association of Schools and Colleges. The commission's complaint process is here: <http://www.nwccu.org/Complaints/ComplaintProcess.htm>

There's a separate process for WSU graduate students: <http://www.gradsch.wsu.edu/Documents/Pdf/GrievanceProcedures.pdf>

Online students also have protections and processes specific to their state of residence. See: <http://online.wsu.edu/nonResidentComplaintProcess.aspx> for links to State Grievance Processes.