

**From:** [noreply@wsu.edu](mailto:noreply@wsu.edu)  
**To:** [curriculum.submit](#)  
**Subject:** 486898 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Certificate  
**Date:** Friday, January 11, 2019 2:17:18 PM  
**Attachments:** [2019.01.11.14.17.10.91.FormData.html](#)  
[2019.01.11.14.17.09.90.currentCatalogFile\\_Justification\\_for\\_Changes\\_to\\_TOC\\_Cert\\_revised.docx](#)  
[2019.01.11.14.17.09.90.currentCatalogFile1\\_Constraints\\_Mgt\\_current\\_requirement.docx](#)

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

**Requested change:** Revise or Drop Graduate Certificate

**Title:** Constraints Management

**Requested Effective Date:** Fall 2019

**Revise certificate requirement:** Yes

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

**Chair:** Zentz, Kim,

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Catalog Subcommittee  
Approval Date

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AAC, PHSC, or GSC  
Approval Date

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Faculty Senate  
Approval Date

**From:** [Zentz, Kim](#)  
**To:** [curriculum.submit](#); [Field, Dave](#)  
**Subject:** RE: 486898 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Certificate  
**Date:** Wednesday, January 16, 2019 4:16:02 PM  
**Attachments:** [image003.png](#)

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I approve the Graduate Certificate revision as proposed.

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](mailto:kzentz@wsu.edu) | 509-358-2030 | cell 509-995-5287  
[etm.wsu.edu](http://etm.wsu.edu)

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**From:** curriculum.submit  
**Sent:** Wednesday, January 16, 2019 4:05 PM  
**To:** Field, Dave <[dfield@wsu.edu](mailto:dfield@wsu.edu)>; Zentz, Kim <[kzentz@wsu.edu](mailto:kzentz@wsu.edu)>  
**Subject:** FW: 486898 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Certificate

Dave and Kim,

I don't see that I've received an approval from either of you on this submission. Do you want to move it forward?

*Suzanne*

Suzanne Lambeth, Assistant Registrar  
Graduations, Curriculum, and Scheduling

This communication may contain privileged, non-public or other confidential information. If you have received it in error, please advise the sender by reply email and immediately delete the message and any attachments without copying or disclosing the contents. Thank you.

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**From:** [Field, Dave](#)  
**To:** [Zentz, Kim](#); [curriculum.submit](#)  
**Subject:** RE: 486898 Engineering and Technology Management Requirements Revise - Revise or Drop Graduate Certificate  
**Date:** Wednesday, January 16, 2019 4:21:01 PM  
**Attachments:** [image001.png](#)

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Thanks Suzanne,

I also approve this in its present form.

Dave

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**Sent:** Wednesday, January 16, 2019 4:16 PM  
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*Suzanne*

Suzanne Lambeth, Assistant Registrar

- E M 501 Management of Organizations
- E M 522 Leadership, Supervision, and Management
- E M 526 Constraints Management
- E M 530 Applications of Constraints Management
- Either of:
  - E M 534 Contemporary Topics in Constraints Management\*
  - E M 555 Enterprise Resource Management

\*E M 534 prerequisite is E M 526 and E M 530

#### **Proposed Requirements (9 credits)**

- EM 526
- EM 530
- EM 534

Rationale:

Constraints management looks at systems from the perspective that they must be limited by at least one constraining factor or else they would perform their function to infinity. The related body of knowledge is unique to virtually all other systems improvement approaches. The majority of these other approaches look at optimizing the parts of the system and then assume that the summation of these local optimization efforts add up to a systems level improvement. Constraints Management differs in that it concentrates on how to focus management efforts on finding and leveraging this constraint to create significant improvements in system level performance typically at little or no real financial cost. The ETM program at WSU is very unique in offering this content. There are many institutions that include references embedded within one or two courses. ETM at WSU offers three courses that are dedicated to this content and we are the only institution worldwide offering a graduate-level, credit-based certificate in this content (EM 526, EM 530, EM 534).

The proposed change from 12 to 9 credits for the Constraints Management Graduate Certificate is in response to concerns identified by current, past and prospective students. Many indicated they wanted the Constraints Management content and certificate but had no interest in the leadership/management/supervision core requirement (EM 501 or EM 522) as they had little Theory of Constraints (TOC) content. For those individuals who don't want to pursue the full Master's in Engineering and Technology Management degree, the leadership/management/supervision requirement did not fulfill their Constraints Management needs and thus was an additional burden in time and cost.

This change includes making EM 534, Contemporary Topics in Constraints Management, the third, distinct TOC course. That course was one of two selective courses, scheduled only once every two years. Both selectives had routinely low enrollments. By eliminating the leadership/management/supervision requirement and making EM 534 the third core requirement, allowing 534 to be offered on a more frequent basis, it will allow students to gain TOC focused content, and thus the certificate, in a shorter time period.

This change also includes removing EM 555, Enterprise Resource Management as a selective for the Constraints Management Graduate Certificate. By making the certificate distinctly TOC and making EM 534, Contemporary Topics in Constraints Management, a core requirement for the Certificate, EM 555 is eliminated.

**Graduate Certificate in Constraints Management**

1. Credit Hours: ~~12~~9 credit hours total
2. Required Courses
  - a. E\_M 526
  - b. E\_M 530
- ~~2. Selective Courses~~
  - ~~d. E\_M 501 or E\_M 522~~
  - ~~e.c. E\_M 534 or E\_M 555~~
3. GPA requirement: Cumulative GPA may not fall below a 3.0