Noel Schulz has submitted a request for a major curricular change. His/her email address is: noel.schulz@wsu.edu.

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

**Degree:** MS Software Engineering (Global Campus only) Masters

**Title:** MS Software Engineering (Global Campus only)

**Requested Effective Date:** Fall 2023

**Dean:** Beyenal, Haluk - Assoc Dean - VCEA - Grad,

**Chair:** Pande, Partha – Director – Electrical Engineering and Computer Science,
I approve this proposal in its current form.

Partha Pratim Pande, FIEEE
Director and Professor
Boeing Centennial Chair in Computer Engineering
School of EECS, WSU
Voiland College of Engineering and Architecture
Washington State University
Office: 509-335-5055
Email: pande@wsu.edu

From: curriculum.submit@wsu.edu <curriculum.submit@wsu.edu>
Date: Thursday, September 29, 2022 at 2:52 PM
To: Pande, Partha Pratim <pande@wsu.edu>
Cc: Beyenal, Haluk <beyenal@wsu.edu>
Subject: 722859 Electrical Engineering and Computer Science Requirements Revise - Revise or Drop Graduate Plan

Pande, Partha – Director – Electrical Engineering and Computer Science,

Beyenal, Haluk - Assoc Dean - VCEA - Grad,

Noel Schulz has submitted a request for a major curricular change.

Requested change: Revise or Drop Graduate Plan

Degree: MS Software Engineering (Global Campus only) Masters

Title: MS Software Engineering (Global Campus only)

Requested Effective Date: Fall 2023

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]
I approve.

HALUK BEYENAL
Professor
Associate Dean for Research and Graduate Studies
Associate editor: Frontiers – Microbiotechnology, Ecotoxicology and Bioremediation. Editorial board: Scientific Reports, Biofouling
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I approve this proposal in its current form.

Partha Pratim Pande, FIEEE
Director and Professor
Boeing Centennial Chair in Computer Engineering
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Major changes for the Online M.S. SE program – Justifications

The proposed major changes for the Online M.S. in Software Engineering program are four-fold:

1. **Changes in the capstone requirement:**
   According to the current capstone requirement “The students must pass the required courses (CPT_S 581 Software Maintenance, CPT_S 583: Software Quality, and CPT_S 582: Software Testing) with a grade of B or higher.”
   Since “capstone” refers to the culminating student experience, students should take at least one of the capstone courses during the last semester of their study. However, since we can’t offer all online courses every semester, students may need to take them before their final semester. This issue was discussed with the Graduate School staff and based on their suggestion we are proposing to change the “capstone requirement” as follows:
   “Students will take four credits of ‘CPT_S 702 - Master's Special Problems, Directed Study, and/or Examination’ course and at least two of those credits will be during their final semester.” This course is set to be offered every semester.
   The CPT_S 702 capstone course extends the students’ knowledge and understanding of fundamental software engineering concepts and provides students the opportunity to demonstrate their depth and breadth of understanding of what they learned throughout the program. Students will work under the guidance of a committee of software engineering faculty.
   The revised capstone requirement is aligned with the requirements of other non-thesis M.S. programs offered by the School of EECS.

2. **Removing E_M 522 from Advanced Course requirements**
   In order to accommodate the additional credits of CPT_S 702, we propose to remove E_M 522 from the degree requirements. E_M 522 is not a major course for Software Engineering discipline; it aims to provide the soft skills for managing teams and effective supervision in business and technical environments.
   We sought feedback from all our Software Engineering faculty about removing this requirement and it was approved with the unanimous faculty vote.

3. **Changes in Elective Courses**
   The elective online course options may change from year to year based on the availability of faculty who teach them. Online M.S. SE program accepts “any 500-level course in Software Engineering, Computer Science, Computer Engineering, or Math as elective credit.”
   To provide more flexibility and avoid confusions in advising, we removed the list of graduate (500-level) elective courses.
   However, we included the list of the eligible undergraduate (400-level) courses, i.e., “CPT_S 415 – Big Data” and “CPT_S 451 – Introduction to Database Systems”. These courses are offered regularly every year.

4. **Total number of credits for the program**
   The total number of credits required by the program is increased from 30 to 31 due to the modified capstone requirement.

Other modifications include:

We included a summary of the additional course requirements and limitations on the non-graduate, transfer, and directed-study credits allowed for the Online M.S. in Software Engineering program (please see the text added in the beginning of the “revised program of study”). These are explicitly listed in the course requirements for consistency with other EECS Non-thesis M.S. programs offered by the School of EECS.

In addition, we corrected a typo in the “Core Courses”. The course number for the “Software Requirements” should be CPT_S 484 instead of CPT_S 584. There is no WSU course with course number CPT_S 584.
Online M.S. in Software Engineering – Major Changes:

Course Requirements
Students in the Online M.S. in Software Engineering program must complete the following coursework for their Program of Study:

- **30-31 total credits** – minimum
  - 27 graded credits – minimum
    - 9 non-graduate (400-level) credits – maximum
    - 6 transferred credits – maximum
    - 3 Directed Study credits (CPT_S 595) – maximum
  - 4 CPT_S 702 credits – minimum
- Any undergraduate coursework assigned to the student to make up for undergraduate deficiencies at the time of admission may not be used toward the student’s degree.

Core Courses - 9 credits
- CPT_S 584: Software Requirements
- CPT_S 582: Software Testing
- CPT_S 587: Software Design and Architecture

Advanced Courses - 12-13 credits
- CPT_S 581: Software Maintenance
- CPT_S 583: Software Quality
- E_M 522: Leadership, Supervision and Management
- E_M 564: Project Management
- CPT_S 702: Master’s Special Problems, Directed Study, and/or Examination (4 credits)

Elective Courses - 9 credits taken from the courses listed below
- CPT_S 415: Big Data
- CPT_S 451: Introduction to Database Systems
- E_M 522: Leadership, Supervision and Management
- CPT_S 515: Advanced Algorithms
- CPT_S 540: Artificial Intelligence
- CPT_S 570: Machine Learning
- CPT_S 580: Advanced Databases
- CPT_S 527: Computer Security OR
  any other 500-level course in Software Engineering, Computer Science, Computer Engineering, or Math
Students are required to satisfy the Capstone Requirement: The students must pass the required courses (Core and Advanced courses listed above) with a grade of B or higher.

**Final Examination**

There is no final exam requirement for the Online M.S. in Software Engineering program. The student must file an Application for Degree form with the Graduate School on or before the deadline date specified by the Graduate School; this is an online process and submission. The final examination should be scheduled during their last semester. The scheduling form must be submitted to the Graduate Program Coordinator a minimum of three weeks in advance of the examination date. In the case of the written exam detailed below, the scheduling form will denote a Ballot Meeting that the student does not need to attend. Note that the student must be enrolled in a minimum of two CPT_S 702 credits during the final exam semester. The final exam consists of a portfolio of representational projects from the student’s Master’s course work, a resume/CV, a LinkedIn profile, and a brief response to an assigned paper. The committee will assign a research paper related to the student’s degree program, together with a specific set of questions. The student will be asked to write a 5-page report (in scientific format) that addresses the questions and submit it to the committee before the date determined on the exam scheduling form. The committee will then grade the entire final project to determine a Pass/Fail grade and forward the signed examination ballots to the Graduate School.