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CS - 390T - Software Quality Engineering (Fall 2018)

01. UG New Omnibus Course (17-18)

General Course Information

Read before you begin

- 1. Please turn on the help text before starting this proposal by clicking on the icon in the top right corner of the heading.
- 2. All fields with an * are required. You will not be able to launch the proposal without completing required fields.

NOTE: Omnibus courses may be offered only three times before a regular course must be proposed for the Catalog.

DUE DATES:

For Fall 2017: Received in the Dean's office February 6, 2017

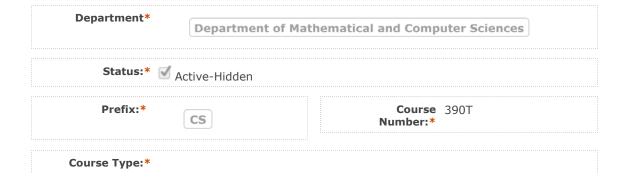
For Spring 2018: Received in the Dean's office September 22, 2017

For Summer 2018: Received in the Dean's office January 26, 2018

For Fall 2018: Received in the Dean's office February 16, 2018

You can consult the <u>Procedural Calendar</u> on the ASA Website for the most up to date information on curriculum due dates

For Additional Assistance and Step-by-Step Instructions on completing this form, consult this document: Omnibus Form Assistance



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	Computer Science
Course Title (include Semester and date for course to run):*	Software Quality Engineering (Fall 2018)
Transcript Course Title:*	Software Quality Engineering
Is this a study abroad course?*	☑ No □ Yes
Equivalent/ Crosslisted?	Equivalent Crosslisted
List all equivalent courses:	
List all crosslisted courses:	

To receive Title IV financial aid funds, all institutions of higher education must comply with the federal definition of a credit hour. The Higher Learning Commission requires institutions to maintain policies and procedures for verifying compliance with this definition.

Federal Credit Hour Definition: A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:

(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of- class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or (2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward to the award of credit hours. 34CFR 600.2 (11/1/2010)

Credit Hours:*	
Distribution of Credit Hours*	4+0
Schedule Type:*	Lecture

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Letter	

Face-to-Face or Equivalent Hours per course:

Consult the Appendices of the <u>Curriculum Manual</u> to determine the hours for the course (appedices begin on page 33 of the document)

Lecture:	60	Lab: 0		
Internship:	0	Practicum: 0		
Other:				
Additional Student Work Hours per course:*				
Specified repeatable course:*	● No ○ Yes			
If yes, number of credits/ repeats allowed				
Prerequisite(s):	CS2050 (grade of C- or abo	CS2050 (grade of C- or above) or permission of instructor		
Corequisite(s):				

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Prerequisite(s) and/or Corequisite(s):	CS3250					
Banner Enforced Prerequisite(s):	CS2050					
Minimum passing grade for Banner enforced prerequisite course(s):	C-					
Banner Enforced Corequisite(s):						
Minimum passing grade for Banner enforced corequisite course(s):						
Banner Enforced Prerequisite(s) and/or Corequisite(s):	CS3250					
Minimum Passing Grade for Banner Enforced Pre/Corequsites	C-					
Registration restric	Registration restrictions (optional):					
Level		Class				
Program		Student attribute				
Major						
Other Registration Restriction(s):						
Course Description:*		rishing to obtain an understanding of software prove the quality of software products. It				

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addresses the broad body of knowledge of software quality across the lifecycle of software products. Topics afford a fundamental understanding of quality philosophies, principles, methods, tools, standards, organizational and team dynamics, professional ethics, and legal implications.

Required Reading and Other Materials will be equivalent to:*

International Organization for Standardization, *ISO/IEC 25010:2011*, Systems and software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- System and software quality models, https://www.iso.org/standard/35733.html (accessed 7 February 2018).

Langr, J., *Pragmatic Unit Testing in Java 8 with JUnit*, Pragmatic Bookshelf (2015)

Martin, R. C., Clean Code: A Handbook of Agile Software Craftsmanship, Prentice Hall (2008)

Myers, R. C., *Essential Test-Driven Development*, Addison-Wesley Professional (August 2018)

Specific, Measurable Student Behavioral Learning Objectives:*

Evaluate quality-based risks associated with a software development project

Determine appropriate software quality metrics

Create effective test plans

Evaluate test plan effectiveness

Conduct software testing and quality assessment

Apply automated testing frameworks, methods, and tools

Identify tools for software quality assurance

Judge appropriateness of software quality assurance tools

Create artifacts through the use of software quality assurance

tools

Analyze software quality artifacts

Construct well-justified rationales for determining the adequacy of software quality for product release

Identify ethical issues arising from software quality evidence

and stakeholder concerns

Assess test coverage

Evaluate testing effort return on investment

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> Detailed Outline | I. Software Quality of Course Content (Major **Topics and** Subtopics) or **Outline of Field** Experience/ Internship*

- A. Perspectives
- B. Expectations
- C. Attributes
- D. Measurement
- E. Standards (ISO-25010:2011)
- F. Professional Ethics and Social Responsibility
- D. Legal Ramifications
- II. Software Quality Assurance (SQA)
- A. Validation
- B. Verification
- C. Defect Discovery
- D. Process Improvement
- III. Software Quality Engineering (SQE)
- A. Defect Prevention
- B. Defect Reduction
- C. Defect Containment
- D. Process Improvement
- E. SQE Certification
- IV. Software Testing
- A. Goals
- B. Attitudes
- C. Strategies
- D. Activities
- E. Automation

Evaluation of Student Performance*

- 1. Assignments
- 2. Project artifacts
- 3. Reflections on learning activities
- 4. Contributions to the learning environment

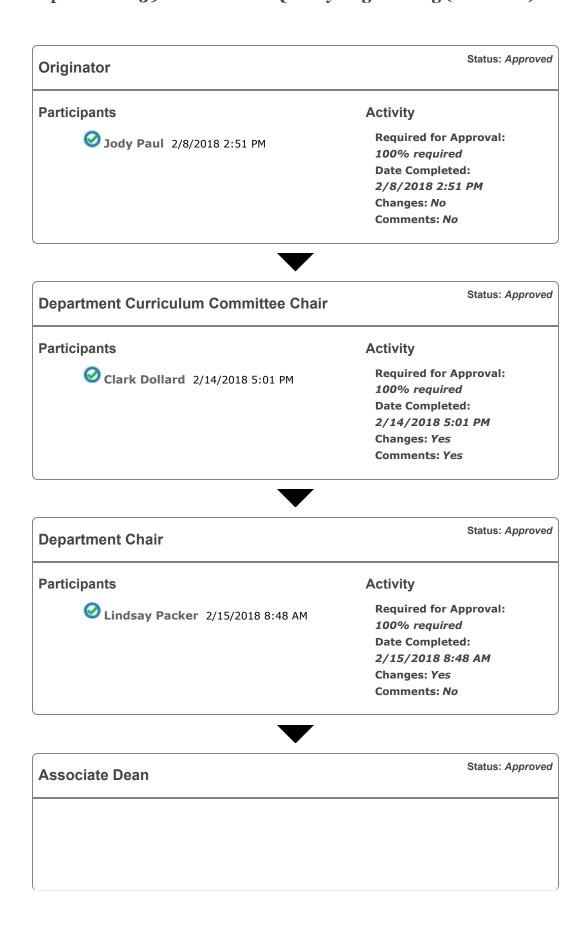
Course Proposal Objective(s)

Learning **Objectives**

No Learning Objectives

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Steps for CS - 390T - Software Quality Engineering (Fall 2018)



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Participants



O Linda Lang-Peralta 2/20/2018 5:29 PM

Activity

Required for Approval: 100% required **Date Completed:** 2/20/2018 5:29 PM Changes: No Comments: No



Registrar's Office

Status: Approved

Participants



Onnie Sanders 2/23/2018 12:05 PM

Activity

Required for Approval: 100% required **Date Completed:** 2/23/2018 12:05 PM

Changes: Yes Comments: Yes