UMBC UGC Instructions for New Course Request Form (revised 4/2016)

Course number & title:

Date submitted:.

Effective date:.

Contact information:

Course number:.

Transcript title:

Recommended Course Preparation: *Please note that all 300 and 400 level courses should have either recommended course preparation(s) or prerequisite(s) and that 100 or 200 level courses may have them.*

Prerequisite: *Please note that all 300 and 400 level courses should have either recommended course preparation(s) or prerequisite(s)* Here fill in course(s) students need to have taken before they enroll in this course. These prerequisites will be enforced through the registration system.   Please explain your choices in the "rationale" (discussed below).

NOTE: Please use the words "AND" and "OR", along with parentheses as appropriate, in the lists of prerequisites and recommended preparation so that the requirements specified will be interpreted unambiguously.

NOTE: Unless otherwise indicated, a prerequisite is assumed to be passed with a "D" or better.

# of credits:

Maximum total credits

Grading method(s): Regular Grading Option(A, B, C, D, F)

Proposed catalog description:

Rationale: Please explain the following:
   a)   Why is there a need for this course at this time?

   b)   How often is the course likely to be taught?

   c)   How does this course fit into your department's curriculum?

   d)   What primary student population will the course serve?

   e)   Why is the course offered at the level (ie. 100, 200, 300, or 400 level) chosen?

   f)   Explain the appropriateness of the recommended course preparation(s) and prerequisite(s).

   g)   Explain the reasoning behind the P/F or regular grading method.

   h) Provide a justification for the repeatability of the course. N/A

Cross-listed courses:

Course Outline:

Note: the UGC form is a Microsoft Word form. You should be able to enter most of the information by tabbing through the fields. The document is protected. In the rare case that you need to unprotect the document, use the password 'ugcform'. Beware that you will lose all the data entered in the form's fields if you unlock and lock the document.

UMBC UGC New Course Request: <u>IS 470 Software Testing</u>

Date Submitted: 2/14/2020   Proposed Effective Date: Spring 2021

	Name	Email	Phone	Dept
Dept Chair or UPD	Sreedevi Sampath	sampath@umbc.edu	5-8845	IS
Other Contact	Richard Sponaugle	rspona1@umbc.edu		IS

COURSE INFORMATION:

Course Number(s)	IS470
Formal Title	Software Testing
Transcript Title (≤30c)	Software Testing
Recommended Course Preparation	
Prerequisite **NOTE:** Unless otherwise indicated, a prerequisite is assumed to be passed with a "D" or better.	IS247
# of Credits Must adhere to the [UMBC Credit Hour Policy](#)	3
Repeatable for additional credit?	☐ Yes X No
Max. Total Credits	3 This should be equal to the number of credits for courses that cannot be repeated for credit. For courses that may be repeated for credit, enter the maximum total number of credits a student can receive from this course. E.g., enter 6 credits for a 3 credit course that may be taken a second time for credit, but not for a third time. Please note that this does NOT refer to how many times a class may be retaken for a higher grade.
Grading Method(s)	☒ Reg (A-F) ☐ Audit ☐ Pass-Fail

PROPOSED CATALOG DESCRIPTION (Approximately 75 words in length. Please use full sentences.**):**
This course will examine concepts and techniques for testing of software in development environments. Topics include, testing software at the unit, subsystem and system levels, approaches to automatic and manual test data generation, creating test oracles, coverage analysis to decide when to stop testing, test prioritization, mutation testing, regression testing, automated software testing tools, and testing trends in current development environments.

RATIONALE FOR NEW COURSE:
a) Why is there a need for this course at this time?
In the software development lifecycle, after a system is developed, it typically enters the testing phase. We develop software systems or programs in various classes in the IS department but there isn't a class that covers the importance of testing or how to go about doing systematic testing when verifying whether a program behaves correctly. This topic is not covered by any other course in the department. The topics covered are relevant to students who are entering the industry workforce in various capacities, like project managers, systems analysis, business analysts etc., as all these types of users are involved in testing software in the industry. The course provides a very important skill to students. It also shapes their understanding of how to write and test software, which can be applied in other courses that they take in the IS department at UMBC.

b) How often is the course likely to be taught?
The course will be offered once a year.

c) How does this course fit into your department's curriculum?
The course covers several programming concepts as it pertains to software testing and so will be used to satisfy the 3rd programming course requirement in the IS major.

d) What primary student population will the course serve?
The primary population it will serve is IS undergraduate students.

e) Why is the course offered at the level (ie. 100, 200, 300, or 400 level) chosen?
The course is offered at the 400 level because the course requires a basic understanding of how to develop software which they learn from the first two programming course sequence (IS147 and IS247) in the department. It has concepts and critical thinking aspects that lend to a 400 level course.

f) Explain the appropriateness of the recommended course preparation(s) and prerequisite(s).
The course expects students to come in with programming knowledge that they would get in IS247, the second course in our programming sequence. The course tackles the next stage after software is developed and also places an emphasis on automated testing, for which programming skill is required. Also, all of the upper-level 3rd programming courses in the department have IS247 as a pre-requisite.

g) Explain the reasoning behind the P/F or regular grading method.
The course will include assignments and exams with corresponding grading criteria. Therefore, this will be a regular graded course.

h) Provide a justification for the repeatability of the course.
N/A

ATTACH COURSE SYLLABUS (mandatory):