Program-Level Assessment: Annual Report

Program Name (no acronyms): Software Engineering   Department: Computer Science

Degree or Certificate Level: MS   College/School: School of Science and Engineering

Date (Month/Year):   Assessment Contact: Erin Chambers

In what year was the data upon which this report is based collected? AY 2021-2022

In what year was the program's assessment plan most recently reviewed/updated? 2018

Is this program accredited by an external program/disciplinary/specialized accrediting organization or subject to state/licensure requirements? No

If yes, please share how this affects the program's assessment process (e.g., number of learning outcomes assessed, mandated exams or other assessment methods, schedule or timing of assessment, etc.):

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (Please provide the complete list of the program's learning outcome statements and **bold** the SLOs assessed in this cycle.)

This year, assessment was targeted at the following outcome:

PLO 1 - Design, implement, evaluate and test a complex software system that meets a given set of computing requirements.

PLO 6 – Function effectively as a member of a team in developing computing technology and solving technical problems.

2. Assessment Methods: Artifacts of Student Learning

Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please describe the artifacts in detail, identify the course(s) in which they were collected, and if they are from program majors/graduates and/or other students. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

6. State and explain what you believe is the ideal team size for a: Small project (about the size of our class project) and a medium project
7. Given your ideal team size and project requirements, explain how you would organize your team and

This discussion occurred in fall faculty meetings, as well as in administrator meetings with the associate dean for the new college.

B. How specifically have you decided to use these findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies

Course content
Teaching techniques
Improvements in technology
Prerequisites

Course sequence
New courses
Deletion of courses
Changes in frequency or scheduling of course offerings

Changes to the Assessment Plan

Student learning outcomes
Artifacts of student learning
Evaluation process

Evaluation tools (e.g., rubrics)
Data collection methods
Frequency of data collection

Please describe the actions you are taking as a result of these findings.
As a result of both this year's discussion and the growth we are experiencing, we have resolved as a department to transition our assessment plan and discussion to a new model. Assessment will be conducted in

SE PLO 2 - Project Management Processes and Tools

Outcomes

Graduates of the program will have an ability to...

MS-SE Utilize project management processes and tools through the complete software life cycle.

Project Management Processes

Criterion	4: Exemplary	3: Accomplished	2: Developing	1: Beginning
Development Methodology[1]	Student can evaluate, select, and justify a set of development practices that support a given project and team.	Student recognizes how the use of speci c development practices enables achievement of project goals and outcomes.	Student can enact common agile and waterfall development practices.	Student can compare and contrast de ned process methodologies (e.g. waterfall) with emperical process methodologies (e.g. agile), and give examples of projects where one is more appropriate than the other.
Refactoring	Is able to appropriately balance the competing concerns of cost, time, project velocity, and technical debt to determine how refactoring as a practice ts			

Comments on rubric:

1. The rubric does not require the use of any speci c agile or de ned process methodology or practices, but does require that the student recognizes the division in perspective between these concepts.

2. Automatic tools such as linters, static code analyzers, dynamic code analyzers, memory leak detectors, etc.

3. Appropriate technology such as using branching and pull requests when using GitLab or GitHub.

Tools

Criterion	4: Exemplary	3: Accomplished	2: Developing	1: Beginning
Version control	Can articulate a suitable versioning and branching strategy			