THE UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE FACULTY SENATE

Senate Document Number <u>6317S</u> Date of Senate Approval 05/04/17

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Statement of Faculty Senate Action:

APC Document 56 (CSCI): Add new courses, CSCI 312, 347 and 412 to the curriculum

Effective Date: Fall 2017

1. Add: On page 116, new course, CSCI 312, Introduction to Artificial Intelligence:

312 Introduction to Artificial Intelligence (3)

An introduction to the sub-discipline of artificial intelligence. Students will investigate and implement various models of intelligent agents interacting within defined environments. Topics include knowledge representation, problem-solving via search, reasoning via probabilistic methods, and machine learning. Prerequisite: grade of C or higher in CSCI 202; STAT 185 or STAT 225. Odd years Fall.

2. Add: On page 117, new course, CSCI 347, Game Programming:

347 Game Programming (3)

A project-oriented course that offers an introduction to game design and development techniques. Students will collaboratively gain experience creating game design documents and storyboards, develop complete projects using current game engines, and produce effective documentation of their work. Topics include game engine basics, graphics, animation, gaming rules, game structures, and environmental modeling. Prerequisite: grade of C or higher in CSCI 202; Odd years Spring.

3. Add: On page 117, new course, CSCI 412, Computer Vision:

412 Computer Vision (3)

A study of inference from noisy and uncertain data using probabilistic, statistical, datadriven approaches. Topics include image processing; segmentation, grouping, and boundary detection; recognition and detection; motion estimation and structure from motion. Prerequisites: grade of C or higher in CSCI 202; STAT 185 or 225. Even years Spring.

Impact: Students may complete any of these courses as partial fulfillment of the requirements for the Computer Science major. Adding these courses gives students a larger selection from which to choose to fulfill the data science requirement and in the elective requirements of both concentrations. The sample schedules in our curriculum description document demonstrate that it is possible for students to plan for their desired electives. All of our current CSCI faculty members can teach Introduction to Artificial Intelligence. Currently, two of our colleagues can teach Game Programming, and three can teach Computer Vision.

Rationale: We are adding these extremely popular courses to our catalog. Each of these courses fulfill the Data Science Category in our proposed 2017 Computer Science curriculum. Since 2011 we have offered variations of these courses three or more times as special topic courses. Each offering has enjoyed enrollments in the range from 17-36 students. The most recent offerings of each course are Artificial Intelligence in Spring 2016 with 25 students, Computer Vision in Spring 2014 with 24 students, and Game Programming in Spring 2017 with 30 students. These courses also offer students a larger variety of choice in fulfilling the data science requirement in our curriculum.