SEWARD COUNTY COMMUNITY COLLEGE
COURSE SYLLABUS

I. TITLE OF COURSE: CS1313- Programming Fundamentals

II. COURSE DESCRIPTION: 3 credit hours
3 **credit hours of lecture and** 0 **credit hours of lab per week.**

This course will introduce the student to logical reasoning and programming related to computer information systems, mathematics and robotics. The use of the LEGO Mindstorms EV3 will provide a solid foundation in which students will gain hands-on experience solving complex problems in a systematic method.
For each unit of credit, a minimum of three hours per week with one of the hours for class and two hours for studying/preparation outside of class is expected.

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Pre-requisite: NA

III. PROGRAM AND/OR DEPARTMENT MISSION STATEMENT:

The CIS Program will provide superior learning opportunities in the area of information technology, utilizing state-of-the-art technology, for both CIS majors and non CIS majors to enable all students to achieve their career and/or educational goals.

IV. TEXTBOOK AND MATERIALS:

Textbook: The Art of LEGO® Mindstorms® EV3 programming, Terry Griffin. No Starch. Press, Inc, 2014.
LEGO Mindstorms EV3
LEGO Mindstorms Programming Software
BricxCC Programming Software
Handouts
E-Publications
Internet

V. SCCC OUTCOMES

Students who successfully complete this course will demonstrate the ability to do the following SCCC Outcomes.

1: Read with comprehension, be critical of what they read, and apply knowledge gained to real life

5: Demonstrate the ability to think critically by gathering facts, generating insights, analyzing data, and evaluating information
6: Exhibit skills in information and technological literacy

9: Exhibit workplace skills that include respect for others, teamwork competence, attendance/punctuality, decision making, conflict resolution, truthfulness/honesty, positive attitude, judgment, and responsibility

VI. COURSE OUTCOMES:

Upon completion of the Programming Fundamentals course with 80% or higher mastery of course competencies, the student should be able to:
Break complex problems into manageable steps
Employ logical thinking to solve problems
Work in a team setting
Solve given problems with little direction
Identify current programming languages that are used in robotics
Identify current programming languages that are used in creating applications
Create a program to direct robotic maneuvers
Apply mathematical calculations to make precise robotic maneuvers
Build sound robotic machines using engineering techniques

VII. COURSE OUTLINE:

1. Logic
2. Programming
3. Robotics
4. Documenting

VIII. INSTRUCTIONAL METHODS:

Lectures, examples, presentations
Hands-on student exercises and projects covering individual units
Related readings and reports from Textbook, Internet, Handouts, E-Publications and Exercises

IX. INSTRUCTIONAL AND RESOURCE MATERIALS:

Textbook (TBD)
Interactive student lab software
Video camera
Computers
Overhead Projector
Handouts
Internet
E-Publications

X. METHODS OF ASSESSMENT:

Assessment will consist of the solutions to real life problems for which students will have to research, plan, program, execute and document.
Outcome #1 will be assessed and measured by the comprehension of reading assignments and in class discussion.
Outcome #5 will be assessed through tests, quizzes and the presentation of a final portfolio.
Outcome #6 will be assessed through the completion of projects.
Outcome #9 will be assessed through attendance, group assignments and presentation of portfolios.

XI. ADA STATEMENT:

Under the Americans with Disabilities Act, Seward County Community College will make reasonable accommodations for students with documented disabilities. If you need support or assistance because of a disability, you may be eligible for academic accommodations. Students

should identify themselves to the Dean of Students at 620-417-1106 or going to the Student Success Center in the Hobble Academic building, room 149 A.

Syllabus Reviewed: 11/09/2018 20:43:00