Montgomery County Community College
CIS 1101
Programming for Everyone
3-2-2

COURSE DESCRIPTION:
The course exposes students with no computing background to key concepts of programming, logical thinking and modern technical fluency. Students develop the essential concepts of logic, design, and problem-solving skills pertinent to their discipline. Students will apply these skills by developing projects and writing programs using tools designed for students with no prior programming experience. The emphasis of the course is to learn concepts and techniques that are common to most programming languages and to gain exposure to concepts required for technically fluent citizens. This course is appropriate for non-information technology majors.

REQUISITES:
Previous Course Requirements
None

Concurrent Course Requirements
None

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
1. Demonstrate effective problem-solving strategies and algorithm design.	Lecture Student Discussions Homework and Project Assignments	Programming Assignments Projects Exams
2. Identify and explain essential programming concepts including data type, operators, input and output, flow control, arrays and modules.	Lecture Discussion Assigned Readings Homework and Project Assignments	Programming Assignments Projects Exams
3. Apply effective problem-solving strategies and algorithm design, documenting their programming solutions with flowcharts, testing plans and discussion.	Lecture Assigned Readings Student Discussions Homework and Project Assignments	Programming Assignments Group Projects Exams

LEARNING OUTCOMES Upon successful completion of this course, the student will be able to:	LEARNING ACTIVITIES	EVALUATION METHODS
4. Construct working projects utilizing a programming language/environment that demonstrates an understanding of essential programming concepts	Lecture Discussion Assigned Readings Homework and Project Assignments	Programming Assignments Group Projects Exams
5. Explain how software, hardware and the Internet play key roles in a modern society.	Lecture Discussion Assigned Readings	Projects Oral Presentations

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1.   How to Identify and Gather Appropriate Information
2.   Solution Strategies
3.   Variables
4.   Data types and Operators
5.   Decision Statements
6.   Flow Control
7.   Single Dimension Arrays
8.   Modules

Topics may be selected from the following areas:
1. Mobile App Design and Creation
2. Design of Interactive media installation
3. Using Software to control Hardware
4. Introduction to Object-Orientation
5. Introduction to Database Theory and Connectivity

LEARNING MATERIALS:
Will vary but may include materials such as:
Crews, T. & Murphy, C. (2008). A Guide to Working With Visual Logic. Course
    Technology. ISBN: 9780324828269. Bundle includes Visual Logic software.

Wolber, Dave (2014). App Inventor 2 : Creating Your Own Apps. O'Reilly. ISBN: 978-
    1491906842

Greenberg, Ira, (2008). Processing: Creative Coding and Computational Art. Apress.
    ISBN: 978-1590596173

Note that these topics are well covered by open educational resources and there may
often OER materials integrated into the course. Other learning materials may be
required and made available directly to the student and/or via the College's Libraries
and/or course management system.

COURSE APPROVAL:
Prepared by: Marie Hartlein and Kendall Martin, Ph.D.   Date: 6/2004
Revised by: Jason Wertz   Date: 4/2009
Revised by: Jeff Bowker   Date: 12/2012
VPAA/Provost or designee Compliance Verification:
        Victoria Bastecki-Perez, Ed.D.   Date: 7/11/2013

Revised by: Patricia S. Rahmlow   Date: 5/2017
VPAA/Provost or designee Compliance Verification:
        Victoria L. Bastecki-Perez, Ed.D.   Date: 8/21/2017

Revised by: Kendall Martin, Ph.D.   Date: 2/25/2018
VPAA/Provost or designee Compliance Verification:
        Victoria L. Bastecki-Perez, Ed.D.   Date: 3/6/2018

Revised by: Kendall Martin, Ph.D.   Date: 3/29/2018
VPAA/Provost or designee Compliance Verification:
        Victoria L. Bastecki-Perez, Ed.D.   Date: 4/9/2018

*This course is consistent with Montgomery County Community College's mission. It
was developed, approved and will be delivered in full compliance with the policies and
procedures established by the College.*