COURSE DESCRIPTION

Course No. **Course Type**	CSC130 Required	**Course Title**	Introduction to Computer Science
Sem. Hours	3	**Coordinator**	Mark Armstrong

Current Catalog Description:

Programming in a high-level language. Emphasis on problem analysis, problem-solving techniques, and software design principles and techniques.

Textbook:

Starting Out With Java From Control Structures through Objects, 5th edition. Gaddis. Pearson. 2012.

References:

None

Course Outcomes:

Upon successful completion of this course, a student should be able to:

1. *demonstrate* a mastery of elementary fundamental algorithms and abstraction;
2. *demonstrate* an understanding of the JAVA programming language, including *analyzing* problems, *designing* solutions, *implementing* basic JAVA syntax, *demonstrating* use of top-down programming, assignment statements, decision structures, looping structures, object-oriented techniques, functions, and arrays;
3. *program* in a team environment.

Activities Enabling Program Outcomes (POx refers to program student outcome x)

Instruction: The core of this course involves the introduction and exploration of programming by studying the fundamentals of an object-oriented programming language (currently JAVA). Students are instructed on design techniques and demonstrate their ability by following design instructions in developing solutions in a programming lab setting. (POc). Team dynamics are discussed and labs are conducted using the pair-programming paradigm (POd). Both procedural and object-oriented techniques are introduced and examined in class and in labs (POi). Students are introduced to Unified Modeling Language (UML) design and use it to lead and discuss abstraction and encapsulation to arrive at object-oriented solutions as well as demonstrate their knowledge in the labs (POk).

Student Activities and Assessment: This course has no activities identified for data collection in program outcome assessment.

Prerequisites by Topic:

Students must have

- an acceptable score on the computer science placement test or
- a grade of at least C (2.0) in MAT120, MAT 150, MAT 151, or MAT 191.

Major Topics Covered in the Course:

- The programming process, algorithm analysis and design
- Identifiers, expressions, data types, and interactivity
- Decision making
- Looping
- Functions
- Arrays
- Class descriptions
- Using classes
- Class implementation

Estimated Curriculum Category Content (Semester hours):

Area	***Core***	***Advanced***	***Area***	***Core***	***Advanced***
Algorithms	.5	0	**Software design**	1	0
Data structures	.5	0	**Prog. Languages**	1	0
Comp Org & Arch	0	0			