CIS 104

Introduction to Programming Logic

Description

CIS 104 will provide the student with the foundational skills and understanding to write interesting, structured, readable programming code and algorithms. Being language-agnostic, the student will learn the basics without being influenced by any individual programming language idiosyncrasies. The course introduces programming concepts and enforces good style and logical thinking. No programming experience is assumed.

Logistics

Class location:	Petoskey Middle School Media Center Computer Lab
Class time:	Thursdays, 6:00pm - 9:00pm
Instructor:	Howard Bates (Please call me Howard)
Office:	Petoskey High School
Office hours:	By arrangement (typically 7:00am - 4:00pm)
Contact info:	hbates@ncmich.edu -or- 231.348.2165
Text:	Introduction to Programming Logic, Comprehensive, 8th edition. Farrell 2015
Extra Book:	FREE HERE!
Website:	http://www.petoskeyschools.org/ncmc/104
Prerequisite:	NONE
Required:	Perl, AnonymousPro Font, Komodo Edit, GitHub account
READ:	THIS, THIS,

Policies

Course Structure:

The class is structured to be 1.5 hours of instruction/discussion followed by 1.5 hours of lab time each week. You should expect to spend additional time outside of class completing your assignments.

Student Service Information:

Information is HERE. Academic calendar is HERE. FERPA is HERE.

Disability Information:

Learning Support Services: Reasonable accommodations can be provided for students with documented disabilities. Please contact Learning Support Services at: (231) 348-6682 or lss@ncmich.edu, located in room 533 in the SCRC.

Course Policies:

Attendance

It is your responsibility to attend all class sessions. If you can't make it, you need to notify me via email. I do not need a reason, just notification. If you fail to notify me more than once, I will lower your grade 20%. If you fail to notify me after that, I will ask you to drop the class for no credit.

Lateness

As long as you are not disruptive, I do not care how late you are.

NCMC Snow Cancellation Policy

If the public schools cancel class in Cheboygan or Gaylord, NCMC classes will also be cancelled. If Petoskey schools are cancelled, NCMC may be open or may just delay opening until later that day. It is best to sign up for My Alerts, found on the portal.

Class Participation

Engage in our discussions as you see fit.

Academic Dishonesty

Academic Dishonesty, misconduct, cheating or plagiarism or other forms of academic dishonesty including acquisition without permission of tests or other academic materials. Included are those students who aid and abet, as well as

those who attempt such behavior. Plagiarism includes, but is not limited to, the use whether by paraphrase or direct quotation, of published or unpublished work of another person without full and clear attribution. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Incidents of academic dishonesty shall be dealt with according to the procedures outlined in Academic Dishonesty as found in the student handbook. Any act of academic dishonesty in this course will result in a zero (0) for the assignment and possible failure of the course.

Late Assignments
All assignments must be turned in on the due date. If you can't accomplish this, I must be notified by email. I will then decide if I will accept the late assignment for full credit. The late penalty is as follows: First assignment one week late = 25% markdown. Any more than this will not be accepted for credit.

Test Make up
You may make up a missed test the following week or by appointment for full credit.

Electronic Device usage in class
As long as you are not disruptive, I don't care what you choose to use. (phone, .mp3 player, laptop, etc.)

Objectives

Programming Ten Commandments
[] Self-documenting code
[] Consistent, proper style
[] Prefer numeric over String
[] Explicit over implicit
[] NO magic numbers
[] Prefer local over global
[] Validate, distill, & sanitize input
[] Limit recursion
[] Loose coupling & high cohesion
[] Practice algorithms

Modern Programming Environment
[] Integrated development environments
[] Modern programming paradigms (Agile, Pair, XP, aspect)
[] Project management
[] Customer service; Translation of customer requirements into actionable code.
[] Revision control systems

Programming Basics
[] Define the scope of variables
[] Define the structure of a program
[] Create executable applications with a dispatch method
[] Modular programming

Algorithms
[] Nested loops
[] MD array iteration
[] Sorting
[] Control-break

Working With Data
[] Declare and initialize variables & constants
[] Differentiate between constants, variables, and parameters
[] Create and manipulate strings

Using Operators and Decision Constructs
[] Use operators and sigils
[] Test equality between strings and numeric data
[] Understand the following tests: <, >, <=, >=, !=, ==, eq, ne
[] Understand the use of Boolean logic (&&, ||, !)
[] Create if and if/else constructs
[] Understand recursion

Using Loop Constructs
[] Create and use while loops
[] Create and use for loops
[] Create and use foreach loops
[] Compare loop constructs
[] Use break and continue (last & next)

Creating and Using Collections
[] Declare, instantiate, initialize and use a one-dimensional array
[] Declare, instantiate, initialize and use parallel arrays
[] Declare, instantiate, initialize and use multidimensional array

Working with External Data

[] Read data in from a file
[] Write data out to a file

Working with Methods

[] Create methods with arguments and return values
[] Initialize variables to methods with return values

OOP

[] Understand class and object abstraction and instantiation
[] Understand encapsulation
[] Understand inheritance & composition
[] Understand polymorphism
[] Understand constructors
[] Understand overloading
[] Understand overriding
[] Unified modeling language

Grading

RUBRIC

Letter Grade	Points	Percent (%)	Honor Points
A	930-1000	93-100	4.00
A-	900-929	90-92.99	3.67
B+	880-899	88-89.99	3.33
B	830-879	83-87.99	3.00
B-	800-829	80-82.99	2.67
C+	780-799	78-79.99	2.33
C	730-779	73-77.99	2.00
C-	700-729	70-72.99	1.67
D+	680-699	68-69.99	1.33
D	630-679	63-67.99	1.00
D-	600-629	60-62.99	0.67
E	000-599	0-59.99	0.00