

6/17/2025

DATE



REQUIRED COURSE



ELECTIVE COURSE

MSD

DIVISION



NEW COURSE



REVISION

# Lake Land College

## Course Information Form

<b>COURSE NUMBER:</b>	MAT-160		<b>TITLE:</b> (30 Characters Max)			Computer Science I							
<b>SEM CR HRS:</b>	3.0	<b>Lecture:</b>		2.0	<b>Lab:</b>	2.0	<b>ICCB Lab:</b>	2.0	<b>ECH:</b>	4.0			
<b>Course Level:</b>	<input type="checkbox"/> Gen Ed/IAI <input checked="" type="checkbox"/> Baccalaureate/Non-IAI		<input type="checkbox"/> Career/Technical <input type="checkbox"/> Dev Ed/Not in Degree Audit		<b>Clinical Practicum:</b>	0.0	<b>Work-based Learning:</b>	0.0	<b>WBL ECH:</b>	0.0			
<b>COURSE PCS #</b>	11 - 11.0201			<b>IAI Code:</b>		<b>Contact Hours (Minutes/Week)</b>							
<b>Repeatable (Y/N):</b>	N	<b>Pass/Fail (Y/N):</b>	N	<b>Variable Credit (Y/N):</b>	N	<b>Min:</b>		<b>Max:</b>		<b>16 Wks</b>	200	<b>8 Wks</b>	400
<b>Prerequisites:</b>	Placed by Assessment or either MAT-129 or MAT-130 with a grade of "C" or higher or STEM Transitional Math (TM001) and one year of high school geometry.												
<b>Corequisites:</b>	None												
<b>Catalog Description: (40 Word Limit)</b>	Introduction to an object-oriented programming language using a disciplined approach to problem-solving, algorithm development as well as procedural and data abstraction. Covers selection, repetition, sequence control structures, program design, records and files, testing and documentation.												

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Introductory concepts of computing	2	2		
Variables and expressions	3	3		
Control statements and program development	7	7		
Methods and behaviors	6	6		
Arrays	4	4		
Files	2	2		
Classes	6	6		
<b>TOTAL</b>	<b>30</b>	<b>30</b>	<b>0</b>	<b>0</b>

### EVALUATION

<b>QUIZZES</b>	<input type="checkbox"/>	<b>EXAMS</b>	<input checked="" type="checkbox"/>	<b>ORAL PRES</b>	<input type="checkbox"/>	<b>PAPERS</b>	<input type="checkbox"/>
<b>LAB WORK</b>	<input checked="" type="checkbox"/>	<b>PROJECTS</b>	<input checked="" type="checkbox"/>	<b>COMP FINAL</b>	<input checked="" type="checkbox"/>	<b>OTHER</b>	<input type="checkbox"/>

### COURSE MATERIALS

<b>TITLE:</b>	Intro to Python for Computer Science and Data Science
<b>AUTHOR:</b>	Paul Deitel and Harvey Deitel
<b>PUBLISHER:</b>	Pearson Education
<b>VOLUME/EDITION/URL:</b>	1st edition
<b>COPYRIGHT DATE:</b>	2020

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		<b>The student will be able to:</b>
Introductory concepts of computing	4	1. Develop, compile and run a simple program. 2. Identify the major components of programs, including comments and simple exception catching. 3. Apply appropriate debugging.
Variables and expressions	6	1. Identify numeric and string values in variables. 2. Create values. 3. Write arithmetic and string manipulation expressions to process data and output results with appropriate formatting.
Control statements and program development	14	1. Identify the algorithmic need for selection and repetition. 2. Develop an appropriate selection or repetition structure. 3. Code a selection or repetition structure that implements the algorithm successfully.

Methods and behaviors	12	<ol style="list-style-type: none"> <li>1. Interpret the components of a method.</li> <li>2. Write value and non-value returning methods, call methods with and without parameters.</li> <li>3. Demonstrate pass-by-reference and pass-by-value.</li> <li>4. Produce overloaded methods.</li> </ol>
Arrays	8	<ol style="list-style-type: none"> <li>1. Develop arrays, including multidimensional arrays and pass arrays to functions.</li> <li>2. Create dynamic lists.</li> <li>3. Sort and search one-dimensional arrays.</li> </ol>
Files	4	<ol style="list-style-type: none"> <li>1. Store formatted data in an ASCII file.</li> <li>2. Read the formatted text file into program variables.</li> </ol>
Classes	12	<ol style="list-style-type: none"> <li>1. Identify class definitions.</li> <li>2. Declare objects.</li> <li>3. Identify and write method definitions within a class, including the constructor methods.</li> <li>4. Show limits of the scope of variables, including instance variables and local variables.</li> </ol>
60		

<b>Outcomes*</b>	<b>At the successful completion of this course, students will be able to:</b>
Course Outcome	Create programs using the three logic structures: sequence, selection and repetition.
Course Outcome	Create and use classes and methods in programs.
Course Outcome	Create and use one and two dimensional arrays in programs.
Primary Laker Learning Competency	Creative Thinking & Problem Solving: Students think creatively and solve problems by successfully combining knowledge in new ways.
Secondary Laker Learning Competency	Information & Technology Literacy: Students not only identify when information is necessary, but they also find, evaluate and use that information effectively with the appropriate technological tools.

\*Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 primary and 1 secondary Laker Learning Competency.