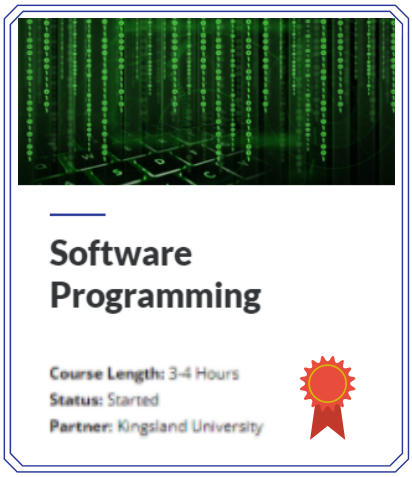
MajorClarity

SOFTWARE PROGRAMMING COURSE OVERVIEW



Course Description

The Software Programming micro-credential was built in partnership with Kingsland University to exclusively offer MajorClarity users a free course teaching the foundational knowledge, skills, and abilities needed to understand the purpose and function of Software Programming. This micro-credential will help prepare you and qualify you for further pursuit of educational opportunities within Software Programming, This course will provide the knowledge, skills, and abilities needed to understand the purpose and function of Software Programming.

- Partner: Kingsland University
- **Target Audience**: Grades 9-12
- **Course Length**: 3-4 Hours

Core Competencies

#	COMPETENCIES	SUBCOMPETENCIES/TOPICS
1	Software Basics	What is Software?
		Software Programming
		Jobs in Software Programming
		Algorithms
		Data Structures
		Application Program Interface (API)
2	Programming Fundamentals	Basic Programming Constructs
		Event-Driven Programming
		Object-Oriented Programming
		Parallel Computing & Concurrent Programming
		Testing & Quality Assurance
3	Programming Technologies	Integrative Coding
		Databases
		Inter Process Communications
		Computer Languages
		Software Security Practices

Suggested Use Cases

- Embed into first level courses for pathway sequences that culminate in industry placements, such as:
  - Programming Foundations
  - Web Design Basics or Adobe Visual Design
  - Computer Science
- Use as a differentiator between Honors and Standard Levels of same course
- Consider for an Independent Study component
- Require as pre-requisite prior to Industry-facing experiences or placements such as:
  - Career Fairs, Lunch & Learns, Job Shadowing
  - Summer Work Opportunities, Internships, & Apprenticeships
- Leverage as a tool to help students clarify potential post-secondary program/majors of interest, which may also further focus college & technical program considerations

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Course Outline

INTRODUCTION
- Navigating the Course
- Course Objectives

SOFTWARE BASICS
- What is software?
- Software Programming
- Jobs in Software Programming
- Algorithms
- Data Structures
- Application Program Interface (API)
- Vocabulary Review
- Knowledge Check

PROGRAMMING FUNDAMENTALS
- Basic Programming Constructs
- Event-Driven Programming
- Object-Oriented Programming
- Parallel Computing & Concurrent Programming
- Testing & Quality Assurance
- Vocabulary Review
- Knowledge Check

PROGRAMMING TECHNOLOGIES
- Integrative Coding
- Databases
- Inter Process Communication
- Computer Languages
- Software Security Practices
- Vocabulary Review
- Knowledge Check

CONCLUSION
- Optional Review
- Final Assessment
- Congratulations!