



ENLIGHTIUM ACADEMY

Ignitia™ Career and Technical Education
Electives

Software Development Tools

Enlightium Academy invites you to open the door to career and college readiness with Career and Technical Education (CTE) courses from Alpha Omega Publications - Ignitia™.

These rigorous, hands-on courses for grades 7-12 promote critical thinking, emphasize problem solving, and encourage students to take responsibility for their own learning. With 24 CTE courses divided into six clusters, these courses put students on practical paths to post-graduate success.

Should you have any questions about the curriculum, please contact support@enlightiumacademy.com or call Enlightium Academy Customer Support at (866) 488-4818 ext. 2017.

If you have questions about technical support or product configuration, please see the information below for Alpha Omega Publications.

Alpha Omega Publications Technical Support

Alpha Omega Publications' technical support is Ignitia™'s full-service technical support system. We exist to promote and preserve our customers' satisfaction. Our services include:

- Technical Support
- Product Configuration and Update Management

Please use the following information to contact Alpha Omega Publications' technical support:

Online:

Access our helpful Technical Support website simply by clicking on the life preserver located in the upper-right corner of any screen in our program!

Telephone:

Toll Free: 1-877-251-6662
Monday –Friday 7 a.m. to 5 p.m. (CT)

SOFTWARE DEVELOPMENT TOOLS

COURSE OVERVIEW

This course introduces students to the variety of careers related to programming and software development. Students will gather and analyze customer software needs and requirements, learn core principles of programming, develop software specifications, and use appropriate reference tools to evaluate new and emerging software. Students will produce IT-based strategies and a project plan to solve specific problems, and define and analyze system and software requirements.

Objectives

- Understand the development of the computer.
- Be able to describe the organization of the Central Processing Unit.
- Demonstrate knowledge of widely used software applications (e.g., word processing, database management, spreadsheet development).
- Identify three levels of programming languages.
- Identify execution differences between interpreted, translated, and compiled languages.
- Describe how computers address data in memory.
- Design structures, classes, and objects that include variables and methods.
- Summarize how data is organized in software development.
- Understand the standard primitive types and operations of the java programming language.
- Define and initialize Java arrays.
- Demonstrate knowledge of the basics of structured, object-oriented language.
- Write software applications using while, do while, for, for-each loops.
- Define logic statements using if, else if, else and switch statements.
- Develop an application using conditional statements.
- Demonstrate knowledge of key constructs and commands specific to a language.
- Develop an application that responds to user input.
- Develop a web application that responds to user input.

| SOFTWARE DEVELOPMENT TOOLS | |
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| UNIT 1: INTRODUCTION TO NETWORK DESIGN | |
| Assignment Titles | |
| 1. Course Overview | 9. Web-Based Software Applications |
| 2. Coding Standards and Conventions | 10. Project: Multimedia and Web Design Careers |
| 3. Software Processes and Methodology | 11. Software Design Principles and Tools |
| 4. Project: Grades Projection IPO | 12. Project: Software Design Principles Table |
| 5. Software Types and Elements | 13. Quiz 2: Central Processing Unit Operations |
| 6. Project: Software Types and Elements | 14. Project: Special Project |
| 7. Quiz 1: Computer History, Computer Hardware, Software, and Organization | 15. Unit 1 Test |
| 8. Multimedia and Graphics Software Applications | 16. Glossary and Credits |

| SOFTWARE DEVELOPMENT TOOLS | |
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| UNIT 2: SOFTWARE DEVELOPMENT | |
| Assignment Titles | |
| 1. Personal Information Management (PIM) Tools | 9. Project: My Personal Website |
| 2. Project: My Mind-Mapping | 10. Integrated Development Environments (IDEs) |
| 3. Computer Security Application Tools | 11. Project: My Text Editor IDE Evaluation |
| 4. Individual Programming Development Tools | 12. Quiz 2: Building Blocks of Programs |
| 5. Project: Assessment of Competitive Office Suites | 13. Project: Special Project |
| 6. Quiz 1: Different Language Abstraction Layers | 14. Unit 2 Test |
| 7. Database Software Development Tools | 15. Glossary and Credits |
| 8. Web Design Software Development Tools | |

SOFTWARE DEVELOPMENT TOOLS**UNIT 3: DEBUGGING****Assignment Titles**

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| 1. Download, Install, Explore IntelliJ IDEA | 9. STDIN and STDOUT |
| 2. Download, Install, Explore NetBeans | 10. File Input, Output, and Network Input, Output |
| 3. Project: MY IntelliJ NetBeans IDE Evaluation | 11. Project: Concepts of File I/O and Network I/O |
| 4. Download, Install, Explore Eclipse | 12. Quiz 2: Text Input, Output, and Exceptions |
| 5. Project: MY IntelliJ NetBeans Eclipse IDE Evaluation | 13. Project: Special Project |
| 6. Quiz 1: Basic Java Applications | 14. Unit 3 Test |
| 7. Exceptions | 15. Glossary and Credits |
| 8. Project: Best Practices in Exception Handling in Java Programming | |

SOFTWARE DEVELOPMENT TOOLS**UNIT 4: SOFTWARE CONFIGURATION MANAGEMENT****Assignment Titles**

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| 1. Code Blocks | 9. Project: Write an IF...ELSE Program that Computes the New Salary for the CIO |
| 2. Project: Concepts of Programming Code Structure in Java | 10. Switch Statements |
| 3. Iterative Loops | 11. Project: Write a Program Using a SWITCH Statement |
| 4. For-Each Loops | 12. Quiz 2: If, Then, and Switch Statements |
| 5. Project: Computing Class Grades | 13. Project: Special Project |
| 6. Quiz 1: While, Do, While, For, Statements | 14. Unit 4 Test |
| 7. Java Logic | 15. Glossary and Credits |
| 8. If, Else If, Else | |

SOFTWARE DEVELOPMENT TOOLS**UNIT 5: OBJECT MODELING UML AND SOFTWARE TESTING****Assignment Titles**

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| 1. Swing and AWT | 8. Project: Social Media on Campus |
| 2. Creating Frames and Dialog Boxes, Components, Form Fields, Panels, Buttons | 9. Application Servers and JavaServer Pages (JSP) |
| 3. Project: Building Better Java using GUI Applications, Frames, Containers, and Dialogs | 10. JavaServer Faces and Future Trends in Programming |
| 4. HTML and Web Pages | 11. Project: Create a Simple Java Server Page |
| 5. Project: Creating a Web Page | 12. Quiz 2: The Future of Programming |
| 6. Quiz 1: GUI Programming | 13. Project: Special Project |
| 7. Business Information System Trends, Applications, and eCommerce | 14. Unit 5 Test |
| | 15. Glossary and Credits |

SOFTWARE DEVELOPMENT TOOLS**UNIT 6: COURSE PROJECT, REVIEW AND EXAM****Assignment Titles**

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| 1. Course Project: The Design Team: Creating a Tablet GUI | 2. Review |
| | 3. Exam |