

# Glendale College

## Course Outline of Record Report

Course ID 005191  
Archived - November 2025

### CS/IS112 : Introduction To Programming Using Java

#### General Information

Author:	<ul style="list-style-type: none"> <li>Tony Biehl</li> </ul>
Attachments:	DE Addendum_CS:IS_112(CE_COR_8:1:20_CoDE_2:27:24.pdf DE Addendum_CS:IS_112 COR_09_01_2020 CoDE_09_26_2023.pdf.pdf
Course Code (CB01) :	CS/IS112
Course Title (CB02) :	Introduction To Programming Using Java
Department:	CSIS
Proposal Start:	Spring 2026
TOP Code (CB03) :	(0707.10) Computer Programming
CIP Code:	(11.0201) Computer Programming/Programmer, General.
SAM Code (CB09) :	C - Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	Yes
Course Control Number (CB00) :	CCC000291935
Curriculum Committee Approval Date:	11/12/2025
Board of Trustees Approval Date:	06/18/2024
Last Cyclical Review Date:	05/08/2024
Course Description and Course Note:	CS/IS 112 is a course in programming computers using the Java programming language, which includes defining the problem, flowcharting, writing, executing, and debugging application programs, and program documentation.
Justification:	Content Change
Academic Career:	<ul style="list-style-type: none"> <li>Credit</li> </ul>
Mode of Delivery:	No value
Author:	No value
Course Family:	No value

#### Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none"> <li>Computer Science</li> </ul>
Alternate Discipline:	<ul style="list-style-type: none"> <li>Computer Information Systems (Computer network installation, microcomputer technology, computer applications)</li> </ul>
Alternate Discipline:	No value

### Course Development

**Basic Skill Status (CB08)**

Course is not a basic skills course.

Allow Students to Gain Credit by Exam/Challenge

**Course Special Class Status (CB13)**

Course is not a special class.

**Pre-Collegiate Level (CB21)**

Not applicable.

**Grading Basis**

- Grade with Pass / No-Pass Option

**Course Support Course Status (CB26)**

Course is not a support course

### General Education and C-ID

**General Education Status (CB25)**

Not Applicable

**Transferability**

Transferable to both UC and CSU

**Transferability Status**

Approved

**GCC General Education Requirements**

Area 2: Mathematical Concepts and Quantitative Reasoning

**Area**

Mathematical Concepts and Quantitative Reasoning

**Status**

Approved

**Approval Date**

09/02/2025

**Comparable Course**

No Comparable Course defined.

**C-ID**

COMP

**Area**

Computer Science

**Status**

Approved

**Approval Date**

02/17/2015

**Comparable Course**

COMP 112 - Introduction to Programming Concepts and Methodologies

### Units and Hours

**Summary**

<b>Minimum Credit Units (CB07)</b>	3
<b>Maximum Credit Units (CB06)</b>	3
<b>Total Course In-Class (Contact) Hours</b>	90
<b>Total Course Out-of-Class Hours</b>	72
<b>Total Student Learning Hours</b>	162

**Credit / Non-Credit Options**

**Course Type (CB04)**

Credit - Degree Applicable

**Noncredit Course Category (CB22)**

Credit Course.

**Noncredit Special Characteristics**

No Value

**Course Classification Code (CB11)**

Credit Course.

Variable Credit Course

**Funding Agency Category (CB23)**

Not Applicable.

Cooperative Work Experience Education

Status (CB10)

**Weekly Student Hours**

	In Class	Out of Class
Lecture Hours	2	4
Laboratory Hours	3	0
Studio Hours	0	0

**Course Student Hours**

<b>Course Duration (Weeks)</b>	18
<b>Hours per unit divisor</b>	54
<b>Course In-Class (Contact) Hours</b>	
Lecture	36
Laboratory	54
Studio	0
<b>Total</b>	90
<b>Course Out-of-Class Hours</b>	
Lecture	72
Laboratory	0
Studio	0
<b>Total</b>	72

**Time Commitment Notes for Students**

No value

**Units and Hours - Weekly Specialty Hours**

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

**Prerequisites, Corequisites, Recommended Corequisites, and Recommended Preparation**

**Advisory**

CS/IS101 - Introduction To Computer and Information Systems

**Objectives**

- Describe distinctions between system software and application software.
- Explain common functions of system software.
- Identify types of application software.
- Understand how to evaluate software when planning a system; compare open vs. proprietary software.

<b>Entry Standards</b>	
Entry Standards	Description
No value	No value

<b>Course Limitations</b>	
Cross Listed or Equivalent Course	Description
No value	No value

<b>Requisite Validation</b>
<b>Upload Statistical Validation and/or other documents (if necessary)</b>
No Value

<b>Specifications</b>	
<b>Methods of Instruction</b>	
Methods of Instruction	Lecture
Methods of Instruction	Laboratory
Methods of Instruction	Demonstrations
<b>Out of Class Assignments</b>	
<ul style="list-style-type: none"> <li>Programming assignments (e.g. write a simple program to sum numbers)</li> </ul>	
<b>Methods of Evaluation</b>	<b>Description of Activity/Interaction</b>
Exam/Quiz/Test	Final examination
Exam/Quiz/Test	Quizzes
Exam/Quiz/Test	Midterm examination

Exam/Quiz/Test

Programming projects

**Textbook Rationale**

The textbook by Gaddis is the 8th edition, replacing the old 7th edition. The textbook by Liang is an alternative textbook.

**Textbooks**

Author	Title	Publisher	Date	ISBN
Gaddis	Starting out with Java: from control structures through Objects	Pearson	2021	9780137451524
Y. Daniel Liang	Introduction to JAVA Programming and Data Structures, comprehensive version	Pearson	2020	978-0-13-651996-6

**Other Instructional Materials (i.e. OER, handouts)**

No Value

**Learning Outcomes****Course Objectives**

Examine problems, apply logic, and provide solutions/algorithms for the problems.

Show the solution/algorithm using flowcharts or pseudocode.

Utilize a compiler to write, debug, and test Java programs.

Design and use algorithms to solve simple problems in a programming environment.

Demonstrate the ability to code, test, and debug programs.

**SLOs**

**Demonstrate sound techniques for designing, developing, and documenting well-structured programs using software-engineering principles.**

Expected Outcome Performance: 70.0

<p><i>CSIS</i> Computer Programmer Certificate</p>	<p>Analyze a programming task/problem; based on that analysis, design and implement an object oriented program using multiple classes in a high level language</p>
	<p>Demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology</p>
<p><i>CSIS</i> Computer Information Systems A.S. Degree</p>	<p>Analyze simple business or technical problems relevant to programming, and prepare solutions to them;</p>
	<p>Demonstrate an understanding of the operations and processes of a computer relevant to programming</p>
<p><i>ESL</i> Upon completion of this program students will:</p>	<p>Apply content knowledge of chosen electives in order to select a degree and/or career pathway.</p>
	<p>Use English reading, writing, listening, and speaking skills at an advanced level of academic proficiency.</p>
<p><i>ST DV</i> Liberal Arts: Science and Mathematics Emphasis A.A. Degree</p>	<p>Apply mathematical and scientific ideas to analyze real-world situations.</p>
	<p>Use appropriate technology and/or tools to enhance scientific thinking and understanding.</p>
<p><i>MATH</i> Data Science for Mathematics AS Degree</p>	<p>Create and monitor reports to preserve data quality, identify critical issues, ethical issue , trends in diversity and social justice, and potential solutions.</p>
	<p>Interpret and evaluate data trends, qualitative research, or patterns in complex data sets using statistical techniques, analytic methods, and tools.</p>
	<p>Obtain large data sets, process them, and analyze them utilizing techniques for matrix manipulation, data exploration, pattern identification, and inferences.</p>
<p><i>CSIS</i> Computer Information Systems Certificate</p>	<p>Demonstrate an understanding of the operations and processes of a computer relevant to programming</p>
	<p>Implement a program in either C/C++ or Java, using objects</p>
<p><i>ILOs</i> Core ILOs</p>	<p>Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.</p>
<p><i>CSIS</i> Information Technology Certificate</p>	<p>Demonstrate installing, configuring and maintaining computer and mobile devices, including diagnosing, resolving and documenting common hardware and software.</p>
<p><i>CSIS</i> Information Technology A.S. Degree</p>	<p>Demonstrate installing, configuring, and maintaining computer and mobile devices, including diagnosing, resolving, and documenting common hardware and software</p>
	<p>Demonstrate the proper server operation procedures, maintenance procedures and managing risks associated with real world networks</p>
	<p>Identify types of computer crime</p>
	<p>Select, access, and use appropriate sources</p>
<p><i>CSIS</i> Information Technology - A.S. Degree Major</p>	<p>Demonstrate installing, configuring, and maintaining computer and mobile devices, including diagnosing, resolving, and documenting common hardware and software.</p>
<p><i>CSIS</i> Computer Software Technician A.S. Degree</p>	<p>Demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology</p>
<p><i>CSIS</i> Computer Software Technician Certificate</p>	<p>Demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology</p>
<p><i>CSIS</i> Cloud Computing Certificate</p>	<p>Design complex elastic cloud systems.</p>
	<p>Design resilient database systems for the cloud.</p>
	<p>Design security systems that limit the risk of attack on an organization cloud systems.</p>

CSIS Computer Science Certificate	Prepare a software project to implement a single scientific, mathematical, business, or technical function
CSIS Computer Science A.S. Degree	Prepare a software project to implement a single scientific, mathematical, business, or technical function
CSIS Computer Science - Certificate	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
CSIS Computer Science - A.S. Degree Major	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
MATH Mathematics AS-T Degree	Solve application problems in math and science using calculus, differential equations, and linear algebra. Solve theoretical problems and prove theorems using calculus, differential equations, and linear algebra.
CSIS Computer Information Systems	analyze simple business or technical problems relevant to programming, and prepare solutions to them demonstrate an understanding of the operations and processes of a computer relevant to programming. implement a program in either C/C++ or Java, using objects
MATH Mathematics - AS-T	analyze, synthesize and evaluate theorems in Linear Algebra. solve applications in math and science using derivatives, integrals, differential equations and linear algebra.
CSIS Computer Support Technician	demonstrate an understanding of computer structure and operations
CSIS Computer Software Technician	demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology write a computer program using either C/C++, Java, or Visual Basic
CSIS Web Development - Certificate	use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.
CSIS Web Development - A.S. Degree Major	use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.
<b>Apply problem-solving skills that will provide a foundation for more advanced programming courses using an object-oriented programming methodology.</b>	
Expected Outcome Performance: 70.0	
CSIS Computer Programmer Certificate	Analyze a programming task/problem; based on that analysis, design and implement an object oriented program using multiple classes in a high level language Demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology
ILOs Core ILOs	Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas. Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
CSIS Computer Information Systems Certificate	Analyze simple business or technical problems relevant to programming, and prepare solutions to them; Demonstrate an understanding of the operations and processes of a computer relevant to programming Implement a program in either C/C++ or Java, using objects
CSIS Computer Information Systems A.S. Degree	Analyze simple business or technical problems relevant to programming, and prepare solutions to them; Demonstrate an understanding of the operations and processes of a computer relevant to programming

<i>ESL</i> Upon completion of this program students will:	Apply content knowledge of chosen electives in order to select a degree and/or career pathway. Use English reading, writing, listening, and speaking skills at an advanced level of academic proficiency.
<i>ST DV</i> Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.
<i>MATH</i> Data Science for Mathematics AS Degree	Create and monitor reports to preserve data quality, identify critical issues, ethical issue , trends in diversity and social justice, and potential solutions. Interpret and evaluate data trends, qualitative research, or patterns in complex data sets using statistical techniques, analytic methods, and tools. Obtain large data sets, process them, and analyze them utilizing techniques for matrix manipulation, data exploration, pattern identification, and inferences.
<i>CSIS</i> Information Technology Certificate	Demonstrate installing, configuring and maintaining computer and mobile devices, including diagnosing, resolving and documenting common hardware and software.
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CSIS  
Computer Information Systems

analyze simple business or technical problems relevant to programming, and prepare solutions to them

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demonstrate an understanding of the operations and processes of a computer relevant to programming.

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implement a program in either C/C++ or Java, using objects

MATH  
Mathematics - AS-T

analyze, synthesize and evaluate theorems in Linear Algebra.

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solve applications in math and science using derivatives, integrals, differential equations and linear algebra.

CSIS  
Computer Support Technician

demonstrate an understanding of computer structure and operations

CSIS  
Computer Software Technician

demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology

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write a computer program using either C/C++, Java, or Visual Basic

CSIS  
Web Development - A.S. Degree Major

use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

CSIS  
Web Development - Certificate

use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

**Implement basic programming logic, including declaring variables, arithmetic, decisions, and iterative loops.**

Expected Outcome Performance: 70.0

CSIS  
Computer Programmer Certificate

Analyze a programming task/problem; based on that analysis, design and implement an object oriented program using multiple classes in a high level language

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Demonstrate the ability to independently create, save, modify and print a document using a word processing program and appropriate assistive technology

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Core ILOs

Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.

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Computer Information Systems  
Certificate

Analyze simple business or technical problems relevant to programming, and prepare solutions to them;

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Demonstrate an understanding of the operations and processes of a computer relevant to programming

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Implement a program in either C/C++ or Java, using objects

CSIS  
Computer Information Systems A.S.  
Degree

Analyze simple business or technical problems relevant to programming, and prepare solutions to them;

---

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ESL  
Upon completion of this program  
students will:

Apply content knowledge of chosen electives in order to select a degree and/or career pathway.

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Data Science for Mathematics AS Degree

Create and monitor reports to preserve data quality, identify critical issues, ethical issue , trends in diversity and social justice, and potential solutions.

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Interpret and evaluate data trends, qualitative research, or patterns in complex data sets using statistical techniques, analytic methods, and tools.

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Obtain large data sets, process them, and analyze them utilizing techniques for matrix manipulation, data exploration, pattern identification, and inferences.

CSIS Information Technology A.S. Degree	Demonstrate an understanding of ethical concern associated with information technology including access, reliability, legal, ethical, and accuracy
	Demonstrate the proper server operation procedures, maintenance procedures and managing risks associated with real world networks
	Select, access, and use appropriate sources
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CSIS  
Web Development - Certificate

use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.

## Additional SLO Information

**Does this proposal include revisions that might improve student attainment of course learning outcomes?**

No

**Is this proposal submitted in response to learning outcomes assessment data?**

No

**If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.**

No Value

**SLO Evidence**

No Value

## Course Content

### Lecture Content

#### Overview (2 Hours)

- Software life-cycle including design, development, styles, documentation, testing and maintenance
- Procedural versus objected oriented programming (Survey of current languages)
- Program design tools and programming environments

#### Elementary Programming (1 Hour)

- variables
- constants
- data types
- literals

#### Selections (4 Hours)

- if
- if-else
- nested if and if-else

#### Functions (4 Hours)

- common math functions
- character
- string

#### Loops (4 Hours)

- while
- do while
- for
- nested loops

#### Methods (4 Hours)

- calling methods
- passing arguments by values
- modularizing code

#### Single Dimensional Arrays (4 Hours)

- basics

- copying array
- passing arrays to method
- searching and sorting

#### **Multi-dimensional Arrays (3 Hours)**

- basics
- processing
- passing

#### **Object and Classes (7 Hours)**

- define
- construct
- accessing object via reference
- constructing objects using constructors
- static variables
- constants
- encapsulation

#### **File I/O and error handling (3 Hours)**

**Total Hours: 36**

### Laboratory/Studio Content

#### **Labs (54 Hours)**

- if
- if-else
- nested if and if-else
- while
- do while
- for
- Methods
- Single Dimensional Arrays
- Multi-dimensional Arrays
- Object and Classes
- Git

**Total Hours: 54**

### Additional Information

#### **Repeatability**

Not Repeatable

#### **Justification (if repeatable was chosen above)**

No Value

#### **Is it possible this course will have a material fee?**

No Value

#### **I have contacted my library liaison (<https://campusguides.glendale.edu/faculty/liasons>):**

No Value

**What term(s) will this course be offered?**

Fall/Winter/Spring/Summer

**Will any additional resources be needed for this course? (Click all that apply)**

No Value

**If additional resources are needed, add a brief description and cost in the box provided.**

No Value