

CS/IS112 : Introduction To Programming Using Java

General Information

Author:	<ul style="list-style-type: none">Nancy Traynor
Attachments:	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:	Fall 2024
TOP Code (CB03) :	(0707.10) Computer Programming
CIP Code:	(11.0201) Computer Programming/Programmer, General.
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	Yes
Course Control Number (CB00) :	CCC000291935
Curriculum Committee Approval Date:	05/08/2024
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:	Mandatory Revision
Academic Career:	<ul style="list-style-type: none">Credit
Author:	No value

Academic Senate Discipline

Primary Discipline:	<ul style="list-style-type: none">Computer Science
Alternate Discipline:	No value
Alternate Discipline:	No value

Course Development

Basic Skill Status (CB08) Course is not a basic skills course. <input type="checkbox"/> 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 <ul style="list-style-type: none">Grade with Pass / No-Pass Option Course Support Course Status (CB26) Course is not a support course
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Transferability & Gen. Ed. Options

General Education Status (CB25)

Not Applicable

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

C-ID	Area	Status	Approval Date	Comparable Course
COMP	Computer Science	Approved	02/17/2015	COMP 112 - Introduction to Programming Concepts and Methodologies.

Units and Hours

Summary

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

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

Laboratory	0
Studio	0
Total	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

Pre-requisites, Co-requisites, Anti-requisites and Advisories

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.

Entry Standards

Entry Standards

Course Limitations

Cross Listed or Equivalent Course

Specifications

Methods of Instruction

Methods of Instruction Lecture

Methods of Instruction Laboratory

Methods of Instruction Demonstrations

Out of Class Assignments

- Programming assignments (e.g. write a simple program to sum numbers)

Methods of Evaluation

Rationale

Exam/Quiz/Test

Final examination

Exam/Quiz/Test

Quizzes

Exam/Quiz/Test

Midterm examination

Exam/Quiz/Test

Programming projects

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Gaddis, Tony	Starting Out with JAVA: From Control Structures through Objects.	Prentice Hall	2019	9780134802213

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

No Value

Materials Fee

No value

Learning Outcomes and Objectives

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

<i>ILOs</i> Core ILOs	Demonstrate depth of knowledge in a course, discipline, or vocation by applying practical knowledge, skills, abilities, theories, or methodologies to solve unique problems.
<i>CSIS</i> Information Technology Certificate	Demonstrate installing, configuring and maintaining computer and mobile devices, including diagnosing, resolving and documenting common hardware and software.
<i>CSIS</i> Information Technology - A.S. Degree Major	Demonstrate installing, configuring, and maintaining computer and mobile devices, including diagnosing, resolving, and documenting common hardware and software.
<i>CSIS</i> Computer Science - Certificate	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
<i>CSIS</i> Computer Science - A.S. Degree Major	Prepare a software project to implement a single scientific, mathematical, business, or technical function.
<i>CSIS</i> 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
<i>MATH</i> 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.
<i>CSIS</i> Computer Support Technician	demonstrate an understanding of computer structure and operations
<i>CSIS</i> 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 use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.
Web Development - Certificate

CSIS use industry standard tools and techniques to produce, publish and maintain Web sites and Web content.
Web Development - A.S. Degree
Major

Apply problem-solving skills that will provide a foundation for more advanced programming courses using an object-oriented programming methodology.

Expected Outcome Performance: 70.0

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 Demonstrate installing, configuring and maintaining computer and mobile devices, including diagnosing, resolving and documenting common hardware and software.
Information Technology
Certificate

CSIS Demonstrate installing, configuring, and maintaining computer and mobile devices, including diagnosing, resolving, and documenting common hardware and software.
Information Technology - A.S.
Degree Major

CSIS Prepare a software project to implement a single scientific, mathematical, business, or technical function.
Computer Science - Certificate

CSIS Prepare a software project to implement a single scientific, mathematical, business, or technical function.
Computer Science - A.S. Degree
Major

MATH Solve applications in math and science using derivatives, integrals, differential equations and linear algebra
Mathematics AS-T Degree

CSIS analyze simple business or technical problems relevant to programming, and prepare solutions to them
Computer Information Systems

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 analyze, synthesize and evaluate theorems in Linear Algebra.
Mathematics - AS-T

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Degree Major

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

Expected Outcome Performance: 70.0

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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.

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 Programing (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

Is this course proposed for GCC Major or General Education Graduation requirement? If yes, indicate which requirement in the two areas provided below.

Yes

GCC Major Requirements

No Value

GCC General Education Graduation Requirements

Communication and Analytical Thinking

Repeatability

Not Repeatable

Justification (if repeatable was chosen above)

No Value

Resources

Did you contact your departmental library liaison?

No

If yes, who is your departmental library liaison?

No Value

Did you contact the DEIA liaison?

No

Were there any DEIA changes made to this outline?

No

If yes, in what areas were these changes made:

No Value

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

- No

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

No Value