



COURSE OUTLINE : CS/IS 139
D Credit – Degree Applicable
COURSE ID 005205
Cyclical Review: August 2020

COURSE DISCIPLINE : CS/IS
COURSE NUMBER : 139
COURSE TITLE (FULL) : Java
COURSE TITLE (SHORT) : Java

CATALOG DESCRIPTION

CS/IS 139 is a hands-on course where the student will be working with programs to develop a knowledge of Java concepts in an interactive environment. Stand-alone applications and network applets will be created and tested across operating systems and hardware platforms.

Total Lecture Units: 2.00

Total Laboratory Units: 1.00

Total Course Units: 3.00

Total Lecture Hours: 36.00

Total Laboratory Hours: 54.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 90.00

Total Out-of-Class Hours: 72.00

Prerequisite: CS/IS 112 or equivalent.



ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	CS/IS	112	Introduction To Programming Using Java	Examine problems, apply logic, and provide solutions/algorithms for the problems;	No
2	CS/IS	112	Introduction To Programming Using Java	show the solution/algorithm using flowcharts or pseudocode;	No
3	CS/IS	112	Introduction To Programming Using Java	utilize a compiler to write, debug, and test Java programs.	Yes

EXIT STANDARDS

- 1 Create Java programs using the current Java Development Kit;
- 2 modify programs to run as a standalone application and as an applet in the Internet environment;
- 3 test programs on multiple computer platforms and across a network;
- 4 use and evaluate graphical user interfaces, animations, and sounds in the programs.

STUDENT LEARNING OUTCOMES

- 1 design and create object-oriented Java programs using the current Java Development Kit;
- 2 create applets and applications and test them across a network, a variety of computer platforms and the internet environment;
- 3 design, create, and evaluate graphical user interfaces, animations, and sounds in programs.

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	Classes Review <ul style="list-style-type: none"> • Constructor • Passing Arguments • Overloading • Scope 	3	0	3
2	Classes <ul style="list-style-type: none"> • Static members • Passing and returning objects • toString method • equals method • Copy objects • Aggregation • This reference variable • Enumerated types • Garbage collection 	8	0	8



3	Text Processing <ul style="list-style-type: none"> • Wrapper Classes • Character Testing and Conversion • StringBuilder Class • Tokenizing Strings • Wrapper Classes for the Numeric Data Types 	4	0	4
4	Inheritance/Polymorphism <ul style="list-style-type: none"> • Calling the Superclass Constructor • Overriding Superclass Methods • Protected Members • Chains of Inheritance • The Object Class • Polymorphism • Abstract Classes and Abstract Methods • Interfaces • Anonymous Inner Classes • Functional Interfaces and Lambda Expressions 	12	0	12
5	Exceptions and Advanced File I/O <ul style="list-style-type: none"> • Handling Exceptions • Throwing Exceptions • Advanced Topics: Binary Files, Random Access Files, and Object Serialization 	4	0	4
6	GUI Applications <ul style="list-style-type: none"> • Creating Windows • Layout Managers • Radio Buttons and Check Boxes • Borders • Splash Screens 	5	0	5
7	toString method	0	4	4
8	Garbage collection	0	4	4
9	Character Testing and Conversion	0	4	4
10	StringBuilder Class	0	4	4
11	Calling the Superclass Constructor	0	4	4
12	Overriding Superclass Methods	0	4	4
13	Protected Members	0	4	4
14	Chains of Inheritance	0	5	5
15	Polymorphism	0	10	10
16	Handling Exceptions	0	5	5
17	Creating Windows	0	6	6
				90



OUT OF CLASS ASSIGNMENTS

- 1 individual projects (e.g. design and create a Java program with animation, sounds, etc.).

METHODS OF EVALUATION

- 1 quizzes;
- 2 midterm examinations;
- 3 programming projects;
- 4 final examination.

METHODS OF INSTRUCTION

- Lecture
- Laboratory
- Studio
- Discussion
- Multimedia
- Tutorial
- Independent Study
- Collaboratory Learning
- Demonstration
- Field Activities (Trips)
- Guest Speakers
- Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	ISBN	Date
Java Software Solutions	Required	New York: Pearson	9		Lewis, John	978- 013446202 8	2017