Web & Database Programming ACS

COURSE OUTLINE

COURSE TITLE	Programming in Java	**BLOCK**	1
		SECTION	6101
COURSE NUMBER	420-980-VA	**SEMESTER**	Summer 2022

HOURS	45	**PREREQUISITES**	420-120-VA
PONDERATION	1-2-3		
CREDITS	2	**CO-REQUISITES**	

MODALITY	MODALITY DETAILS	DATES	SCHEDULE
SY (Zoom on Omnivox)	Synchronous: Online synchronous courses have a scheduled meeting time to conduct live lectures, discussions, group work, etc., which requires that all students be available to attend classes via a videoconference tool.	Feb. 22, 2022, to May. 11, 2022 May. 11, 2022 to Jun. 22, 2022	Mon 14:30-18:00 Wed 14:30-18:00 Fri. - Jun. 17 14:30-18:00

COURSE DESCRIPTION

This course introduces computer programming to students with no prior programming experience. It also explains basic skills in solving problems and designing algorithms to students, allowing them to write and test their programs using an object-oriented programming language (Java) and an Integrated Development Environment (IDE). It also introduces fundamental programming concepts such as program structure, data types, and variables, conditional and looping constructs, objects, methods, classes, and arrays.

TEACHER'S INFORMATION

Mohammad Ali Hasheminezhad (Adin Ashby)
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Availability:
Please contact me through Mio if you have any questions.

TEACHING METHODS

- Problem-solving
- Lecture
- Project-based learning
- Brainstorming
- Modeling/demonstration

REQUIRED TEXTBOOK / ADDITIONAL EXPENSES (if applicable)

- *Oracle Java Tutorial*. The java™ tutorials. (2021, October 13). Retrieved October 14, 2021, from https://docs.oracle.com/javase/tutorial/. (Recommended)
- Horstmann, C. S. (2019). *Core java*. Pearson.

ASSESSMENT AND EVALUATION	
Assessment activity	**Percentage (%)**
2 Assignments	15% (each)
Midterm Exam	30%
Final Exam	40%
Total	**100%**

COURSE CONTENT				
Week or Date	**Type of Class** *(Lecture or Lab)*	**Modality** *(OL or TR)*	**Topic / Readings**	**Assessment Type / Details** *(if applicable)*
1	**Lecture**	**SY**	**Topic:** Welcome & Java Basics **Readings:** Getting Started	
2	**Lecture**	**SY**	**Topic:** Java Basics **Readings:** Language Basics **Topic:** Console input & Output **Readings:** Basic I/O - Scanner	
3	**Lecture**	**SY**	**Topic:** Flow of Control (Selection) **Readings:** Control Flow Statements	
4	**Lecture**	**SY**	**Topic:** Flow of Control (Iteration) **Readings:** Control Flow Statements	**Assignment 1**

5	**Exam & Lecture**	**SY**	**Midterm Exam**	**Midterm Exam**
6	**Lecture**	**SY**	**Topic:** Arrays of primitive types **Readings:** Arrays	**Assignment 2**
7	**Lecture & Exam**	**SY**	**Topic:** Defining Classes **Readings:** Classes and Objects	**Final Exam**

COLLEGE POLICIES		
Policy	**Purpose**	**Full policy**
IPESA	Institutional Policy on The Evaluation of Student Achievement	link
Student Academic Complaints (7210-8)	To provide a fair and expeditious hearing for students' academic complaints. To encourage a student to seek mediation of an academic complaint through the appropriate mediation committee as this is most likely to affect a solution satisfactory to both parties.	link
Cheating and Plagiarism (7210-31)	This policy is intended to promote and educate students about academic integrity, and to protect the interests of students, faculty, and the College. Cheating and plagiarism are violations of academic integrity and are considered to be very serious academic offenses. They undermine the legitimacy of the academic degrees awarded by the College and deny honest students of some of the rewards of their efforts.	link
Student Misconduct in the Classroom (7210-19)	To provide procedures for handling cases of student behavior that is disruptive to the teaching/learning process in the classroom, laboratory, clinical, seminar, or other instructional settings (on or off campus), including meetings or electronic correspondence between teachers and students. Conduct that is abusive to the teacher and/or other students or infringes on others' basic rights may be dealt with under the Zero Tolerance Policy, the Human Rights Policy, or the Policy on Electronic Social Aggression (Cyberbullying), as appropriate. Technicians have the right to act under this policy in labs if the teacher is not present. This	link

	policy does not limit the teacher's or the College's right to take immediate action in cases of perceived imminent danger to persons or property.	
Code of Conduct (Procedure)	Based on the College's mission and values and with respect for other by-laws, policies, and procedures in effect, this policy sets forth principles, guidelines, and norms of behavior expected from all individuals present at Vanier College, including students, faculty, employees, administrators, members of the Board of Directors and visitors. Its purpose is to ensure a respectful, favorable, and safe environment that promotes learning activities and integrates the development, well-being, and safety of persons while ensuring the protection of college property. Its aim is to ensure the exercise of human rights and obligations of persons at Vanier College while enabling the College to exercise its rights and obligations. It contributes to the common good and harmonious functioning of our college community.	link
Religious Holy Day Absences (see IPESA)	The College respects the observance of religious holy days by students. The College recognizes the diversity of its students' religious beliefs, supports their right to observe religious holy days, and affirms that students who wish to observe religious holy days are to be reasonably accommodated. In its official Academic Calendar, the College formally recognizes civic or statutory holidays set by law or by the collective agreements.	link

TEACHER OR COURSE-SPECIFIC RULES / GUIDELINES	
Rule / Guideline	**Details**
Late arrival	If a student arrives late (after the scheduled class time), the instructor has the right to refuse entry until following the break.
Missing evaluation	If a student misses a summative evaluation (including quizzes), he/she must justify their absence with a medical note within 3 days of the missed evaluation. Failure to do so will result in zero.

Disturbing student	Any student disturbing class can be removed from class at the discretion of the teacher. The student may be marked absent for the rest of the class.
Class attendance	Attendance is done orally during the class. Zoom log does not count as participation. Attendance can be done at any time in the classroom or multiple times. Not being responsive to the instructor when asked is considered an absence for the session.
Assessment Problems	Any problem during the assessment should be reported to the instructor immediately. Late complaints are not accepted.
Remote learning - Student responsibility	It is the student's responsibility to ensure that the connection with his/her laptop, mobile phone, or computer, as well as having the necessary software e.g., Zoom, Omnivox, and connection credentials work correctly before the start of class.

COURSE COMPETENCIES

	Code: 00Q2

Objective Standard

Statement of the Competency	Achievement Context
Use programming languages.	· For problems that are easily solved · Using basic algorithms · Using a debugger and a functional test plan

Elements of the Competency	Performance Criteria
1. Analyze the problem.	· Correct breakdown of the problem · Proper identification of input and output data and of the nature of the processes · Appropriate choice and adaptation of the algorithm
2. Translate the algorithm into a programming language.	· Appropriate choice of instructions and types of elementary data · Efficient modularization of code · Logical organization of instructions · Compliance with the language syntax · Computer code consistent with the algorithm
3. Debug the code	· Efficient use of the debugger · Identification of all errors · Astute choice of debugging strategies · Relevance of the corrective actions · Clear record of solutions to the problems encountered
4. Implement the functional test plan	· Attitudes and behaviors that demonstrate thoroughness · Identification of all operational errors · Relevance of the corrective actions · Proper functioning of the program · Clear record of information concerning tests and their results

Code: 00Q3

Objective Standard

Statement of the Competency	Achievement Context
Solve computer-related problems using mathematics.	· Based on situational problems · Using quantitative data

Elements of the Competency	Performance Criteria
1. Process numbers as they are represented in the computer memory.	· Accurate representation of numbers in different base systems · Accurate conversion of numbers from one base to another · Accurate interpretation of the ranges of numeric types · Accurate interpretation of the precision of numeric types · Appropriate choice of the numeric type
2. Model multi-variable logical reasoning.	· Correct formulation of logical functions · Efficient simplification of logical functions · Appropriate use of Boolean algebra · Accurate production of truth tables · Appropriate verification of logical functions

Code:	00Q6

Objective Standard

Statement of the Competency	Achievement Context

Use an object-oriented development approach	· Based on a problem · Using nomenclature and coding rules

Elements of the Competency	Performance Criteria
1. Analyze the problem.	· Problem breakdown based on requirements of an object-oriented approach · Proper identification of input and output data and the nature of the processes · Accurate identification of the classes to be modeled · Proper identification of the algorithms to be created
2. Model the classes.	· Introduction to Proper identification of class attributes and methods · Proper application of encapsulation and inheritance principles · Proper graphic representation of the classes and their relationships · Compliance with nomenclature rules
3. Produce the algorithms for the methods.	· Appropriate identification of the operations necessary for each method · Proper identification of a logical sequence of operations · Appropriate verification of algorithm correctness · Accurate representation of algorithms

4. Program the classes.	· Appropriate choice of instructions, types of primitive data and data structures · Logical organization of the instructions · Proper programming of messages to be displayed for the user · Proper integration of the classes into the program · Proper program performance · Compliance with the language syntax · Compliance with coding rules