American University of Ras Al Khaimah

AURAK Syllabus

Course Title: Introduction to Computer Programming Lab

Course Code: CSCI 113

Credit Hours: 1

Semester and Academic Year:

Prerequisite course(s) and/or co-requisite courses, if applicable: CSCI 112 (Co-req)

Faculty Name:

Contact Information and Office Hours:

Course Description:
(1:0:3) this course introduces the use of computer programming as a problem-solving tool in laboratory environment. Topics in procedural programming include expressions, control structures, simple data types, input/output, graphical interfaces, testing, debugging, and programming environments.

Course Textbooks and Materials:
Deitel & Deitel, C++ How to Program, 9th Edition, Prentice Hall, 2014. ISBN: 0133378713

Other Resources:
- Ulla Kirch-Prinz and Peter Prinz, A Complete Guide to Programming in C++, 1st Edition, Jones and Bartlett Publishers, 2001. ISBN: 0763718173**.**
- Walter Savitch, Absolute C++, 6th Edition, Pearson, ISBN:0133970787

Web Resources:

Course Learning Outcomes (CLOs)

Course Learning Outcomes At the end of this course, students should be able to:	
CLO 1	Write computer programs to solve specific computer problems.
CLO 2	Use procedural programming tools appropriately including expressions, control structures, simple data types, input/output, graphical interfaces.
CLO 3	Test, debug, and use programming environments.

Assessment Activities

The dates for quizzes, exams, and submission of assignments are specified in the schedule. You will be graded in this class based on the number of points you earn for quizzes, exams written assignments, or other activities, including your class participation. Keep track of your scores in Blackboard.

Assessment Activities and Grading Weight	Course Activities / Assignments* 40%	Mid-term Exam 20%	Group Project and Presentation 10%	Final Exam 30%
CLO 1	X	X		X
CLO 2	X	X	X	X
CLO 3	X	X	X	X

*Each of the 11 Lab Assignments are due at the end of the lab session when they were assigned. Best 10 out of 11 will count. All assignments are individual work.

Mapping Course to Artificial Intelligence and Data Science Program Outcomes (CAC):

Outcome Number	Program Outcomes	Program *Outcomes* Addressed in Course
1	**Analyze a complex computing problem and to apply principles of computing, artificial intelligence, statistics, and other relevant disciplines to identify solutions.**	X
2	**Design, implement, and evaluate computer science and artificial intelligence solutions to meet a given set of computing requirements in the context of the program's discipline.**	

3	Communicate effectively in a variety of professional contexts.	
4	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	
5	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	X
6	Apply computer science theory and software development fundamentals to produce computing-based solutions.	X

Grading Scale:

The grading system and scale for AURAK, as established by the Board of Trustees, is as follows:

AURAK Grading System and Scale		
Grade	Percentage Scores	Grade Points
A	95-100	4
A-	90-94	3.7
B+	86-89	3.3
B	83-85	3
B-	80-82	2.7
C+	76-79	2.3
C	73-75	2
C-	70-72	1.7
D+	66-69	1.3
D	60-65	1
F	0-59	0

Schedule of Course Topics, Required Reading, and Assignments and Assessments

Week	Topic	Required Readings	Assignment, Assessment (with grade weighting) & Due Date	Mapping of CLO's to Assessments
1	• Introduction to Programming Languages, algorithms and algorithms design.	Chapter 1: Introduction to Computers and C++		
2	**Assignment 1:** • Basic operations: cin/cout • Data type int/char/double/...	Chapter 2: Input, Output and operators	Assignment 1- 4% Due date: W2	CLO 2
3	**Assignment 2:** • Decimal/Binary/he xadecimal base • Data type CHAR • cin/cout CHAR		Assignment 2- 4% Due date: W3	
4	**Assignment 3:** • simple if statement+ Pseudo-code • if/else + Pseudo-code • Nested if+ Pseudo-code	Chapter 4: Control Statements: Part 1	Assignment 3- 4% Due date: W4	CLO 1, 2
5	**Assignment 4:** • switch case + Pseudo-code	Chapter 5: Control Statements: Part 2	Assignment 4- 4% Due date: W5	CLO 1, 2
6	**Assignment 5:** • loop Structures: for loop	Chapter 5: Control Statements: Part 2	Assignment 5- 4% Due date: W6	
7	**Assignment 6:** • Loop Structures: for loop. • Loop Structures: do/While loop	Chapter 5: Control Statements: Part 2	Assignment 6- 4% Due date: W7	

8	• Review 1(practice session) • Nested Loops		Project – 10% Due date: W14	
9	Midterm Exam		Midterm Exam – 20%	CLO 1,2,3
10	**Assignment 7:** • Functions	Chapter 6: Functions and an Introduction to Recursive Functions	Assignment 7-4% Due date: W10	
11	**Assignment 8:** • Recursive functions	Chapter 6: Functions and an Introduction to Recursive Functions	Assignment 8-4% Due date: W11	CLO 2,3
12	• Review 2 (Practice session) • Functions	Chapter 6: Functions and an Introduction to Recursive Functions		
13	**Assignment 9:** • 1D Arrays	Chapter 7: Class Templates array and vector	Assignment 9-4% Due date: W13	
14	**Assignment 10:** • 2D arrays	Chapter 7: Class Templates array and vector	Assignment 10 -4% Due date: W14	
15	**Assignment 11:** • Strings	Chapter 22: Bits, Characters, C Strings and Structs	Assignment 15 -4% Due date: W15	CLO 2,3
16	• Final Exam		Final Exam – 30%	CLO 1,2,3

Attendance Policy

University policy is that students are to attend all classes and to arrive on time. Students are required to:

- Attend all learning and teaching sessions associated with their program of study.

- Notify their course instructors in advance (in person, by phone or e-mail) that they will be absent from time-tabled class sessions.

- Obtain prior permission from their instructor or course manager, for planned absences of two or more consecutive class sessions during the semester.

- Provide a medical certificate or other corroborating evidence to explain their absence, if required by the University.

Unsatisfactory student attendance includes failure to regularly attend learning and teaching sessions without providing a satisfactory reason to instructors for absence and/or persistent late arrival at, or early departure from, learning and teaching sessions. Where a student fails to attend classes for **four or more weeks cumulatively,** or where a recurring pattern of non-attendance is observed over the course of the semester, the instructor has the option of deeming that the student has failed the course, in which case that student may receive an "F (Fail)" or "U (Unsatisfactory)" grade, as appropriate. At this point, and at the instructor's recommendation, the dean also has the authority to instruct the registrar to remove or withdraw the student from the course.

Disability Accommodations

Students with disabilities may find they require additional support, services, or considerations. AURAK will endeavor to support students with disabilities or special needs where resources are available. Accommodations will be provided, for students with verified needs, allowing equal access to educational facilities, programs, services, and activities at AURAK. Disability Accommodations are never applied retroactively – only students who have previously requested and have been approved for supporting accommodations can have them apply to a given academic semester/course. Students needing support must make the request from the Department of Counseling, Testing, and Disability Services located in Building H.

Other Relevant Policies

A. **Academic Integrity**

The Honor Code

The American University of Ras Al Khaimah strongly supports the concept of academic integrity and expects students and all other members of the AURAK community to be honest in all academic endeavors. The AURAK Honor Code can be found in the AURAK Student Handbook.

The role of the Honor Code and associated Academic Integrity Policy is to protect the academic integrity of the university, encourage consistent ethical behavior among students, and foster a climate of honorable academic achievement. The Honor Code is an integral part of university

life and students are responsible, therefore, for understanding and abiding by the code's provisions. While a student's commitment to honesty and personal integrity is assumed and expected, this Code and associated policy and procedures provides
 clarity of expectations.

Expectations

Cheating, plagiarism, and all other forms of academic fraud are unacceptable; they are serious violations of university policy. AURAK expects all students to be familiar with university policies on academic integrity. The university will not accept a claim of ignorance – either of the policy itself or of what constitutes academic fraud – as a valid defense against such a charge.

Violations of Academic Integrity

Violations of academic integrity constitute academic fraud. Academic fraud consists of any actions that serves to undermine the integrity of the academic process or that gives the student an unfair advantage, including:
* Inspecting, duplicating or distributing test materials without authorization.
* Cheating, attempting to cheat, or assisting others to cheat – relevant here is the prohibition on being in possession of a mobile telephone or similar electronic device during a test or examination. In case such devices are found with a student, the student will be deemed to have attempted to cheat and will be subject to disciplinary action under the Student Academic Integrity Policy.
* Altering work after it has been submitted for a grade.
* Plagiarizing.
* Using or attempting to use anything that constitutes unauthorized assistance.
* Fabricating, falsifying, distorting, or inventing any information, documentation, or citation.

Plagiarism

One of the most common violations of academic integrity is plagiarism. Plagiarism can be intentional or unintentional. However, since each student is responsible for knowing what constitutes plagiarism, unintentional plagiarism is as unacceptable as intentional plagiarism and thus will bring the same penalties.

Plagiarism – submitting the work of others as one's own - is a serious offense. In the academic world, plagiarism is theft. Information from sources – whether quoted, paraphrased, or summarized – must be given credit through specific citations. When a student paraphrases a work, it is still necessary to cite the original source. Merely rearranging a sentence or changing a few words is not sufficient. The citation style should be appropriate for the discipline and should clearly indicate the beginning and ending of the referenced material. All sources used in the preparation of an academic paper must also be listed with full bibliographic details at the end of the paper, as appropriate in the discipline.

Faculty and Student Expectations

- Every student, faculty member, and administrator is responsible for upholding the highest standards of academic integrity. Every member of the AURAK community shall honor the spirit of this policy by refusing to tolerate academic fraud.
- It is the responsibility of the instructor to provide students with additional guidelines for what constitutes "authorized" and "unauthorized" assistance.
- It is the responsibility of every student to see clarification if in doubt about what constitutes 'authorized" and "unauthorized" assistance. In cases involving collaborative work, all students within the collaborative group may be help responsible for violating the code if any member of the group receives, accepts, or utilizes "unauthorized" assistance.
- Students are required to obtain permission prior to submitting work, any part of which was previously or will be submitted in another course. The instructor has the option of accepting, rejecting, or requiring modification of the content of previously or simultaneously submitted work.

A student who suspects that a violation of academic integrity has occurred should report the violation to the dean or to the Office of the Provost. In this report, the student should describe any action taken, such as talking with the person involved or with a faculty or staff member. Every effort will be made to preserve the anonymity of the student reporting the incident;

Possible penalties for academic fraud include: Formal warning, Reduction in grade for the assignment, Reduction in the grade for the course, A failing grade for the assignment, A failing grade (F) in the course, and/or Dismissal or Expulsion from the University.

Please refer to the relevant section in the *Student Handbook* and ensure a clear understanding of the provisions of the University Honor Code and the Student Academic Integrity Policy.

B. **Concerns about Grades or Other Course Matters**

Students are responsible for their learning experiences. If you are concerned about a class matter, first discuss it with the instructor. If the matter is not resolved, the next step is to meet with the Chair of the department in which the course is taught. If you still have a concern, meet with the Dean of the school in which the course is taught. The matter is likely to be resolved before it reaches that point, but if it is not, then visit the Associate Provost for Academic and Student Affairs. Students who decide to "jump to the top" will be referred "back" to the appropriate next step.

C. **Assignments**

University policy is that assignments are due on the date assigned. Instructors may refuse to accept late assignments or lower the grade that would be otherwise given.

D. **Mobile Phones**

All mobile phones, pagers and/or other communication devices should be turned off before entering the classroom. <u>Students may NOT have mobile telephone or other electronic devices in their possession while completing examinations. Any violation will be deemed as having attempted to cheat.</u>

E. **Diversity and the Use of English**

English is the common language of the AURAK campus for everyone. It is the only language to be used in the classroom. AURAK brings together students and faculty from diverse cultural and linguistic backgrounds, which is one of the strengths of the university. This diversity provides an opportunity to share our different experiences and enlarge our understanding of the world.