



The University of Jordan

Accreditation & Quality Assurance Center

Programming
Methodologies

1	Course title	Programming Methodologies
2	Course number	1901237
3	Credit hours (theory, practical)	3 credit hours
	Contact hours (theory, practical)	3 hours of lab lecturing per week
4	Prerequisites/corequisites	1901233
5	Program title	B.Sc. In Computer Science
6	Program code	
7	Awarding institution	The University of Jordan
8	Faculty	KASIT
9	Department	Computer Science
10	Level of course	Second
11	Year of study and semester (s)	Fall 2014/2015
12	Final Qualification	
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	

16. Course Coordinator:

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17. Course Description:

The course would basically cover the following areas: Multi-threading and synchronization, Storage and I/O (i.e.Memory and Garbage Collection, File Structure, I/O Streams, Serialization), defensive programming techniques (error handling, exceptions, assertions, debugging aids), current programming trends (functional and/or scripting), code testing, and tuning strategies and techniques.

18. N/A**19. Course aims and outcomes:**

A- Aims:

This course aims at equipping the students with knowledge and skills necessary to build robust programs taking into account best practicing of code development, as well as become aware of methods to prevent, test, and mitigate errors of various types.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

I) Knowledge and Understanding: Students should

- 1) Understand the basic and unusual control structures in programming languages
- 2) Know how to choose identifier names adequately, and how to use them
- 3) Understand the basic and unusual data types in programming languages
- 4) Understand the basic techniques for debugging and code testing
- 5) Understand the basic components that constitute a well-written program

II) Intellectual skills: with the ability to ...

- 1) Distinguish between various defensive programming techniques
- 2) Identify the debugging technique fit for a particular programming setup
- 3) Identify the testing technique fit for a particular programming setup
- 4) Identify common bugs in code and mitigate them

III) Subject Specific Skills: With ability to

- 1) Use selected tools for code debugging
- 2) Use selected tools for code testing

IV) Transferable skills:

- 1) Discuss and work in a group in order to solve different real world problems

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Introduction	1	Dr. S. Al-Haj Baddar		Quizzes/Exams	Code Complete: Chapters 1-4
Design in Construction	2	Dr. S. Al-Haj Baddar	I) 5	Quizzes/Exams	Code Complete: Chapter 5
Working Classes	1	Dr. S. Al-Haj Baddar	I) 5	Quizzes/Exams	Code Complete: Chapter 6
High-Quality Routines	1	Dr. S. Al-Haj Baddar	I) 5	Quizzes/Exams	Code Complete: Chapter 7
Defensive Programming	2	Dr. S. Al-Haj Baddar	II) 2 I) 4 II) 1 II) 4	Quizzes/Exams	Code Complete: Chapter 8
Issues with Using Variables	1	Dr. S. Al-Haj Baddar	I) 2	Quizzes/Exams	Code Complete: Chapter 10
The Power of Variable Naming	1	Dr. S. Al-Haj Baddar	I) 2	Quizzes/Exams	Code Complete: Chapter 11
Data Types: fundamental and Unusual	2	Dr. S. Al-Haj Baddar	I) 3	Quizzes/Exams	Code Complete: Chapter 12 + Chapter 13
Loops and Unusual Control Structures	2	Dr. S. Al-Haj Baddar	I) 1	Quizzes/Exams	Code Complete: Chapter 16+ chapter 17
General	1	Dr. S. Al-Haj	I) 1	Quizzes/Exams	Code Complete: Chapter

Control Issues		Baddar			19
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21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

Teaching:

Lecturing

Lab exercises

Discussion (instructor-students, students-students)

Learning:

Lab worksheets

Assignments

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Practical exercises

Paper-based quizzes

Paper-based exams

Practical quizzes

23. Course Policies:

A- Attendance policies:

According to UJ policies pertaining to regular class attendance

B- Absences from exams and handing in assignments on time:

According to UJ policies pertaining to makeup and incomplete exams

C- Health and safety procedures:

According to UJ policies pertaining to health and safety (avoid letting food and beverages into the lab, avoid harming and/or manipulating lab computers)

D- Honesty policy regarding cheating, plagiarism, misbehavior:

According to UJ policies pertaining to cheating, plagiarism, misbehavior. **All acts of cheating, misbehavior, and/or plagiarism will be strictly penalized according to UJ regulations**

E- Grading policy:

Midterm Exam --> 30%

Final Exam --> 50%

Quizzes and assignments --> 20%

F- Available university services that support achievement in the course:

Computer Labs

24. Required equipment:

Hardware: Computer (with at least 4 GB of memory), students are encouraged to work under the Linux operating system

Software: Java IDE (Preferably Eclipse or Netbeans); C++ IDE (preferably Visual Studio 2010)

25. References:

A- Required book (s), assigned reading and audio-visuals:

- Code Complete: A Practical Handbook of Software Construction. Author: Steve McConnell. Edition: 2nd Edition (2004). Publisher: Microsoft Press.
- Java Oracle Documentation: <http://docs.oracle.com/en/java/>

B- Recommended books, materials, and media:

- MSDN Microsoft Documentation: <https://msdn.microsoft.com/en-us/library/ms123401.aspx>

26. Additional information:

None

Name of Course Coordinator: Dr. Sherenaz Al-Haj Baddar

Signature: -----

Date: 9-3-2016

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

Head of Department
Assistant Dean for Quality Assurance
Course File