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هيئة تقويم التعليم
Education Evaluation Commission
المركز الوطني للتقويم والاعتماد الأكاديمي
National Center for Academic Accreditation and Evaluation

ATTACHMENT 5.

COURSE SPECIFICATIONS

Problem Solving and Programming

(CIS 102)

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Course Specifications

Institution: **Jouf University**	Date:
College/Department: **Computer and Information Sciences/Computer and Information Sciences**	

A. Course Identification and General Information

1. Course title and code: **Problem Solving and Programming (CIS 102)**
2. Credit hours: **3**
3. Program(s) in which the course is offered. **B.Sc. in Computer Science**
4. Name of faculty member responsible for the course
5. Level/year at which this course is offered: **Level 2 / 1st year**
6. Pre-requisites for this course (if any): **Computer skills (CIS 101)**
7. Co-requisites for this course (if any):
8. Location if not on main campus:

9. Mode of Instruction (mark all that apply):

a. traditional classroom	✓	What percentage?	50%
b. blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. correspondence		What percentage?	
f. Other	Lab	What percentage?	50%

Comments:

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B. Objectives

1. What is the main purpose for this course?
   - **Introducing the essence of computational problem solving**
   - **Introducing computer algorithms**
   - **Introduction to syntax, semantics and translation of computer software.**
   - **The Python programming language: data and expressions, control structures, lists, functions.**

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)
   - **Help students to develop problem-solving abilities and programming knowledge and skills.**
   - **Encourage students to use internet to look for related websites, software, and references.**

C. Course Description (Note: General description in the form used in Bulletin or handbook)

This course introduces students to programming and computational problem-solving using the Python programming language. Topics covered include the essence of computational problem-solving, computer algorithms, computer hardware and software, the Python programming language: data and expressions, control structures, lists and functions.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to Computational Problem Solving • What is Computer Science? • Introducing the Essence of Computational Problem Solving • Computer Algorithms • Computer Components Overview • The Python programming language	3	6
Data and Expressions • Literals • Variable and Identifiers • Operators • Expressions • Data Types	2	4

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Control Structures • What is a Control Structure? • Boolean Expressions (Conditions) • Selection Control • Iterative Control	3	6
Lists • List Structures • List (Sequences) in Python • Iterating over Lists (Sequences) in Python • More on Python Lists	3	6
Functions • What is a Function Routine? • Defining Functions in Python • Value-Returning and Non-Value Returning Functions • Parameter Passing • Keywords and Default Arguments in Python • Variable Scope	3	6

2. Course components (total contact hours and credits per semester):

		Lecture	Tutorial	Laboratory/ Studio	Practical	Other:	Total
Contact Hours	Planed	**30**	**0**	**30**	**0**	**0**	**60**
	Actual	**30**	**0**	**30**	**0**	**0**	**60**
Credit	Planed	**2**	**0**	**1**	**0**	**0**	**3**
	Actual	2	0	1	0	0	3

3. Additional private study/learning hours expected for students per week. 4

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to

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reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)			
Code #	**NQF Learning Domains And Course Learning Outcomes**	**Course Teaching Strategies**	**Course Assessment Methods**
1.0	**Knowledge**		
1.1	Recognize the steps in the computational problem solving process.	Lectures Lab Assignments	Homework Quizzes Exams
1.2	Explain the basic computer and structured programming fundamentals.		
2.0	**Cognitive Skills**		
2.1	Analyze a problem and apply principle of computing to provide a solution.	Lectures Lab Assignments	Homework Quizzes Exams
2.2	Design, implement, and evaluate a computing–based solution to meet the requirements in a given problem.		
3.0	**Interpersonal Skills & Responsibility**		
N/A			
4.0	**Communication, Information Technology, Numerical**		
N/A			
5.0	**Psychomotor**		
N/A			

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Homework and Quizzes	12	10%
2	Midterm-1 Exam	6	15%
3	Midterm-2 Exam	11	15%
4	Lab Assignments	15	10%
5	Final Exam	16	50%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)
6 office hours in each week.

E. Learning Resources

1. List Required Textbooks
- Introduction to Computer Science Using Python: A Computational Problem-Solving Focus, by Charles Dierbach, Wiley (2013). ISBN: 9870470555156

2. List Essential References Materials (Journals, Reports, etc.)

3. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

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• www.python.org
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access, etc.)
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) • Classroom (32 seats) • Laboratory (25 PC)
2. Technology resources (AV, data show, Smart Board, software, etc.) • A white board • Overhead projector • Computer • Internet connection
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

G. Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching • Course Evaluation Survey conducted by Quality Assurance Committee • Office hours discussing the student's problems
2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department • CLO Evaluation Survey conducted by Instructor • Outcomes Evaluation Surveys conducted by Instructor • Teaching Evaluation Survey conducted by Academic Advising Committee
3. Processes for Improvement of Teaching • Collecting all results obtained from the different surveys and the concluded recommendations and actions approved by the Department Council for course teaching improvement are reported to next course instructor to take it into consideration. • Faculty Development Program provides training for Faculty Staff. • Review teaching strategies periodically by specialized committee. • Mentoring of teaching by faculty members.
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) • Quality Assurance and Accreditation Unit will review every semester the overall course work and monitor the ILO (indirect learning outcomes) achievement. • Deanship of Development and Quality Assurance will investigate the Quality assurance procedures, and review program accreditation progress. • External reviewers from a reputable university will be invited to evaluate the course

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binder as well as review the accuracy of the grading policy. • Independent faculty members who were teaching the same course are requested to grade same questions for various students.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. • Self- assessment and external assessment will be carried out. The feedback received from these assessments will be used to plan for further improvement in the course syllabus, teaching method, and delivery of course materials.

Name of Course Instructor: _____

Signature: _____ Date Specification Completed: _____

Program Coordinator: Dr. Saad Alanazi

Signature: _____ Date Received: ٢١/٥/١٤٤٠

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