



Course Specifications: Introduction to Computer Systems CSE051

1. Basic Information

Program Title	Biomedical Engineering
Department offering the Program	Biomedical Engineering
Department Responsible for the Course	Computers Engineering and Control Systems Dept.
Course Code	CSE051
Year/ Level	Level 000
Specialization	Minor
Requirements	
Authorization data of course specification	

Teaching Hours	Lectures	Tutorial	Practical
	2	1	1.5

2. Course aims:

No.	Aim
1	Apply knowledge of mathematics, science and algorithms to the area of computer programming.
4	Apply object oriented programming principles to implement simple clinical computer applications.

3. Intended Learning Outcomes (ILOs):

a. Knowledge and Understanding:

No.	Knowledge and Understanding
A2	Define the different Engineering principles in the fields of machine, assembly languages, high level language, advanced computer applications, real-time systems and communication technology (ICT).
A8	Match the related research and current advances in the field of computer programming.

b. Intellectual Skills

No.	Intellectual Skills
B8	Select the algorithms, programs, and ICT tools for simple application.

c. Professional Skills

No.	Professional Skills
C1	Apply integrally the principles of computer programming to solve engineering and Biomedical.

d. General Skills

No.	General Skills
D3	Communicate effectively.
D4	Demonstrate IT capabilities
D6	Manage tasks and resources efficiently.

4. Course Contents:

No.	Topics	Weeks
1	Problem solving techniques for engineering problems in the field of electrical, electronics and computer Engineering.	1-3
2	Procedural programming concepts.	4,5
3	Object oriented programming, inheritance, overriding, and overloading.	6,7
4	Compiling, linking, and debugging using C++ and Java programming languages.	9,10
5	Case study 1: building a complete database application.	11-12
6	Case study 2: building a complete Network application using ports and sockets.	13-14

5. Teaching and Learning Methods:

No.	Teaching Method
1	Lectures
2	Discussion Sessions



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3	Information Collection from Different Sources
4	Practical

6. Teaching and Learning Methods for Disabled Students:

No.	Teaching Method	Reason
1	Extra lab meetings	To practice programming

7. Student Evaluation:

7.1 Student Evaluation Methods:

No.	Evaluation Method	ILOs
1	Mid Term Examination	A2,B8
2	Practical Examination	B8,C1, D3
3	Semester work	A2, A8,B8,C1, D4,D6
4	Final Term Examination	A2, A8, B8

7.2 Evaluation Schedule:

No.	Evaluation Method	Weeks
1	Mid Term Examination	8
2	Practical Examination	13
3	Semester work	Weekly
4	Final Term Examination	15

7.3 Weighting of Evaluations:

No.	Evaluation Method	Weights
1	Mid Term Examination	20%
2	Practical Examination	10%
3	Semester work	20%
4	Final Term Examination	50%
Total		100%

8. List of References

No.	Reference List
1	Donis Marshall, "Programming Microsoft Visual C# 2008: The Language", Microsoft Press.
2	Horstmann, Cay S. <i>Big Java: Compatible with Java 5, 6 and 7</i> . John Wiley & Sons, 2009.
3	Zak, Diane. <i>Programming with Microsoft Visual Basic 2012</i> . Boston, MA: Course Technology, Cengage Learning, 2014
4	Sharp, John. <i>Microsoft Visual C# 2013 step by step</i> . Sebastopol, California: O'Reilly Media/Microsoft Press, 2013.

8. Facilities Required for Teaching and Learning:

No.	Facility
1	Lecture Classroom
2	Lab Facilities
3	White Board
4	Data Show System
5	Presenter
6	Sound System

10. Matrix of Knowledge and Skills of the Course:



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No.	Topic	Aim	Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
1	Problem solving techniques for engineering problems in the field of electrical, electronics and computer Engineering.	1, 4	A2	B8	C1	
2	Procedural programming concepts.	1	A2	B8	C1	D6
3	Object oriented programming, inheritance, overriding, and overloading.	1	A2	B8	C1	D4
4	Compiling, linking, and debugging using C++ and Java programming languages.	1	A8	B8	C1	D6
5	Case study 1: building a complete database application for a Hospital.	4	A8, A2	B8	--	D3, D4, D6
6	Case study 2: building a complete Network application using ports and sockets.	4	A8, A2	B8	C1	D6, D4, D3

Course Coordinator: Prof. Dr.

Head of Department: Assoc. Prof. Hossam Eldeen Moustafa

Date of Approval: