Course Name: Computer Interface
Course Code: IT313

I. Basic Course Information

Major or minor element of program: Major
Department offering the course: Information Technology Department

Academic level: 300 Level
Semester in which course is offered: First (Fall) Semester
Course pre-requisite(s): Microprocessors IT312

Credit Hours: 3
Contact Hours Through:

Lecture	Tutorial*	Practical*	Total
2.5	0.0	1.5	4.0

* 1.5 hours for **either** Tutorial or Practical

Approval date of course specification: September 2014

II. Overall Aims of Course

Familiarize the student with the basics as well as the recent advances of computer interfaces.

III. Program ILOs covered by course

Program Intended Learning Outcomes (By Code)			
Knowledge & Understanding	Intellectual Skills	Professional Skills	General Skills
K1,K2,K15,K23	I1,I18,I19	P6,P7,P11,P16	G2,G6,G7

IV. Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

On completing the course, students should be able to:

K.1 Learn opto-couplers and opto-isolators.
K.2 Study relay and driving circuits.
K.3 Learn analogue components of computer interfacing.
K.4 Studymemory read /writes bus cycles& I/O bus power characteristics.
K.5 Studyhardware interrupts and interrupts controllers.
K.6 Study RS232 & USB interfaces.

b. Intellectual/Cognitive Skills

On completing the course, students should be able to:

I.1 Design computer interfaces.
I.2 Apply design principles to the creation of user-oriented interfaces.
I.3 Perform a detailed analysis of the target user community of an interface.
I.4 Evaluate the design of a multimodal interface.

c. Practical/Professional Skills

On completing the course, students should be able to:

P.1 Design computer interfacing for different devices.
P.2 Implementprograms using assembly language able to run on microprocessors.
P.3 Develop work ethics through valuing individual efforts and prohibiting plagiarism.
P.4 Demonstrate the attitude and competency to evaluate user interfaces and interaction prototypes.

c. General and Transferable Skills

On completing the course, students should be able to:

G.1 Improve team work skills.
G.2 Improve presentation skills.
G.3 Solve practical problems.

V. Course MatrixContents

	Main Topics / Chapters	Duration (Weeks)	Course ILOs Covered by Topic (By ILO Code)			
			K & U	I.S.	P.S.	G.S.
1-	Review of Logic Design Basics	1	K1	[ ]	[ ]	[ ]
2-	optocouplersand optoisolators	1	K1	I1,I2	[ ]	G3
3-	relay and driving circuits	2	K2	I1,I2	[ ]	G3
4-	Analog components for computer interfacing	1	K3	I1,I2	P1,P2	G3
5-	Bus: Memory, Input/Output, System bus signals	1	K4	I1,I2	P1,P2	G3
6-	hardware interrupts&interrupt controllers	2	K5	I1,I2	P1,P2	G3
7-	Timers and counters	1	K5	I1,I2	P1,P2	G3
8-	RS232 & USB interfacing systems	1	K6	I1,I2	P1,P2	G3
9-	Microprocessor instruction setProgramming	3	K6	I1,I2	P1,P2	G3

	Net Teaching Weeks	**13**				

VI. Course Weekly Detailed Topics / hours / ILOs

Week No.	Sub-Topics	Total Hours	Contact Hours	
			Theoretical Hours	Practical Hours*
1	Review of Logic Design Basics	2.5	2.5	
2	Opt couplers and opt isolators	4	2.5	1.5
3	Relay and driving circuits	4	2.5	1.5
4	Relay and driving circuits	4	2.5	1.5
5	Analog components for computer interfacing	4	2.5	1.5
6	Hardware interrupts & interrupt controllers	4	2.5	1.5
7	**Midterm Exam**			
8	Hardware interrupts & controllers	4	2.5	1.5
9	Hardware interrupts & controllers	4	2.5	1.5
10	Timers and counters	4	2.5	1.5
11	RS232 & USB interfacing systems	4	2.5	1.5
12	Microprocessor instruction setProgramming	4	2.5	1.5
13	Microprocessor instruction setProg.	4	2.5	1.5
14	Microprocessor instruction setProg.	4	2.5	1.5
15	**Final Exam**			
Total Teaching Hours		**51**	**33**	**18**

* **No Practical/Tutorial during the first week of the semester**

VII. Teaching and Learning Methods

Teaching/Learning Method	Selected Method	Course ILOs Covered by Method (By ILO Code)			
		K & U	Intellectual Skills	Professional Skills	General Skills
Lectures & Seminars	X	K1:K6	I3,I4	P3,P4	
Tutorials					
Computer lab Sessions					
Practical lab Work	X	K3:K6	I1,I2	P1,P2,P4	G1,G3
Reading Materials					
Web-site Searches					
Research & Reporting					
Problem Solving / Problem-based Learning					
Projects					
Independent Work					
Group Work	X		I1,I2	P1,P2,P3	G1,G2
Case Studies					
Presentations					
Simulation Analysis					
Others (Specify):					

VIII. Assessment Methods, Schedule and Grade Distribution

Assessment Method	Selected Method	Course ILOs Covered by Method (By ILO Code)				Assessment Weight / Percentage	Week No.
		K & U	I.S.	P.S.	G.S.		
Midterm Exam	x	K1,K2,K3,K4	I3	P4	G3		7
Final Exam	x	K1:K6	I3,I4	P4	G3	60%	15
Quizzes	x	K1:K6	I2	P1,P4	G3		4,8,10
Course Work							
Report Writing							
Case Study Analysis							
Oral Presentations							
Practical	x		I1,I2	P1,P2,P4	G2,G3		11
Group Project	x		I1,I3,I4	P1,P2,P3	G1,G2		9
Individual Project							
Others (Specify):							

IX. List of References

Essential Text Books	• Microprocessors and Microcomputers • Hardware and Software (Ronald J. Tocci, Frank J. Ambrosio), 2003
Course notes	• Lecture Slides and Notes
Recommended books	• The Intel Microprocessors • Architecture, Programming, and Interfacing (Barry B. Brey)
Periodicals, Web sites, etc …	• Various

X. Facilities required for teaching and learning

List the facilities required
- None

Course coordinator: Prof. Hoda Onsi

Head of Department: Prof. Reda Abd El Wahab

Date: September 2014