

ATTACHMENT 5.

Kingdom of Saudi Arabia
**The National Commission for Academic Accreditation &
Assessment**

**T6. Course Specifications
(CS)**

Course Specifications

Institution	Najran University	Date	28/12/1438
College/Department	college of engineering/electrical engineering department		

A. Course Identification and General Information

1. Course title and code: microprocessor and microcontroller lab, 336EE-1			
2. Credit hours 1			
3. Program(s) in which the course is offered. (If general elective available in many programs indicate this rather than list programs) Electrical Engineering			
4. Name of faculty member responsible for the course Eng. Essam Al- Yafrosi			
5. Level/year at which this course is offered 8 th level/4 th year			
6. Pre-requisites for this course (if any) NA			
7. Co-requisites for this course (if any) 335EE-3			
8. Location if not on main campus			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="90%"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="10%"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

B Objectives

1. What is the main purpose for this course?

By the completion of this course, the student should be able to:

1. Identify the 8086 training kit and demonstrate the basic operations and assembly commands.
2. Develop microprocessors arithmetic and logic instructions.
3. Implement hardware interfaces to practical systems.
4. Recognize the microprocessor interrupts.

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)

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

Course Description:

Introduction to microprocessors and their architecture; Microprocessor C/Assembly programming and machine code generation; RAM and EPROM; RS-232C; SCI and serial port interface; Parallel I/O interface and DMA; Programmable I/O interfaces and UART; DAC and ADC converters; Real time implementation; Project. Introduction.

1. Topics to be Covered

List of Topics	No. of Weeks	Contact hours
Introduction to 8086 microprocessors	1	2
Experiment #1: Introduction to MDA – 8086 Training Kit	1	2

Experiment #2: Basic operations of MDA 80x86 trainer kit	1	2
Experiment #3: different commands of MDA 80x86 trainer Kit	1	2
Experiment #4: Explore kit mode functionality	1	2
Experiment #5: Explore PC mode functionality	1	2
Experiment #6: Write a program to display the digits in decimal, from 0-7 into 7-segment	1	2
Experiment #7: initialize DOT MATRIX DISPLAY	1	2
Experiment #8:A/D convertor application	1	2
Experiment #9:D/A convertor application	1	2
Experiment #10:Interrupt system 8086	1	2

2. Course components (total contact hours and credits per semester):						
	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	NA	NA	22	NA		22
Credit	NA	NA	1	NA		1

3. Additional private study/learning hours expected for students per week.	2
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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 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	Describe microprocessors and microcomputers	Laboratory experiments.	Lab. Reports. Mid-terms exams and final exam
1.2	Familiar with MDA-8086 trainer set and their applications	Laboratory experiments	Lab. Reports. Mid-terms exams and final exam
1.3	Understand the machine code as well as assembly programming	Laboratory experiments	Lab. Reports. Mid-terms exams and final exam
2.0	Cognitive Skills		
2.1	Solve the practical engineering problems.	Laboratory experiments	Lab. Reports. Mid-terms exams and final exam
2.2	Differentiate types of microprocessors and microcomputers practically.	Laboratory experiments	Lab. Reports. Mid-terms exams and final exam
2.3	Implement different applications of microprocessors systems.	Laboratory experiments	Lab. Reports. Mid-terms exams and final exam
3.0	Interpersonal Skills & Responsibility		
3.1	During the classes students has to act responsibility.	Laboratory reports	Lab performance assessment
4.0	Communication, Information Technology, Numerical		
4.1	Use the computer to debug, correct, run and execute programs written in machine as well as assembly languages	Laboratory experiments	Lab performance assessment
4.2	Use the trainer set to simulate different applications of microprocessors	Laboratory experiments	Lab performance assessment
5.0	Psychomotor		
5.1	NA		
5.2	NA		

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.)									
Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)								
	1.1	1.2		2.1		3.2		4.1	
1.1									
2.1									

6. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Middle semester exam 1	6	10%
2	Middle semester exam 2	12	10%
3	Lab. report	14	30%
4	Lab performance	15	20%
5	Final exam	16	30%

D. Student Academic Counseling and Support

<p>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)</p> <p>6 hours per week</p>
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E Learning Resources

1. List Required Textbooks Triebel and Singh “The 8088 and 8086 Microprocessors”, Prentice Hall, 2000
2. List Essential References Materials (Journals, Reports, etc.) MDA-Win8086 MANUAL, An Integrated Development Environment kit, Midas Engineering co., ltd
3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
4. List Electronic Materials, Web Sites, Facebook, Twitter, etc. Black board learning system
5. Other learning material such as computer-based programs/CD, professional standards or regulations and software. Dos box program

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.) LAB class room
2. Computing resources (AV, data show, Smart Board, software, etc.) Data show
3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)

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G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <p>Complete course evaluation questionnaire by the students Feeding back from the mid-terms exam records.</p>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p>
<p>3 Processes for Improvement of Teaching</p>
<p>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)</p>
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.</p>

Name of Instructor: _____ **Eng. Essam Al- Yafrosi** _____

Signature: _____  _____ Date Report completed: _____ 28/12/1438 _____

Name of Course Instructor _____

Program Coordinator: _____

Signature: _____ Date Received: _____