



**Jordan University of Science and Technology**  
**Faculty of Engineering**  
**Mechanical Engineering Department**

ME425 Microcontroller Applications

Summer Semester 2019-2020

**Course Catalog**

3 Credit Hours. Introduction to Microcontroller based systems; architecture, basic assembly language programming, stacks, interrupts, communication. A/D conversion and timer subsystems with applications.

**Text Book**

<b>Title</b>	Arduino Cookbook
<b>Author(s)</b>	Michael Margolis
<b>Edition</b>	2nd Edition
<b>Short Name</b>	Ref # 1
<b>Other Information</b>	

**Instructor**

<b>Name</b>	<b>Dr. Laith Sawaqed</b>
<b>Office Location</b>	C5-L1
<b>Office Hours</b>	
<b>Email</b>	lssawaqed@just.edu.jo

**Class Schedule & Room**

Section 1:  
Lecture Time: Sun, Mon, Tue, Wed : 10:00 - 11:30  
Room: منصة الكترونية

Prerequisites		
Line Number	Course Name	Prerequisite Type
253200	ME320 Fundamentals Of Electronics And Digital Logic	Prerequisite / Study
2001140	NE114 Programming For Engineers	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Introduction to microcontrollers.	From Ref # 1
Weeks 2, 3	How to program a microcontroller.	From Ref # 1
Weeks 4, 5	Using mathematical operators.	From Ref # 1
Week 6	Serial communication in microcontrollers.	From Ref # 1
Weeks 7, 8	Digital and analog Inputs/outputs.	From Ref # 1
Weeks 8, 9	Getting input from sensors.	From Ref # 1
Weeks 10, 11	Visual, physical, and audio outputs.	From Ref # 1
Weeks 11, 12	Remotely controlling external devices	From Ref # 1
Weeks 13, 14	Using displays, time and dates	From Ref # 1

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
use and program a micro-controller [1SLO1]	33%	
Build a code using C/C++ programming language [1SLO1, 1SLO2]	33%	
Design and implement a complete embedded system [1SLO1, 1SLO2]	34%	

Relationship to Program Student Outcomes (Out of 100%)																	
A	B	C	D	E	F	G	H	I	J	K	SLO1	SLO2	SLO3	SLO4	SLO5	SLO6	SLO7
											66.50	33.50					

Evaluation	
Assessment Tool	Weight
First Exam	20%
Second Exam	20%
Final Exam	40%
Project	10%

Home Works	10%
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<b>Policy</b>	
Rules and notes	<ol style="list-style-type: none"> <li>1) Never come late to the classroom, you will disturb your mates and your instructor if you do so and will be considered absent.</li> <li>2) Turn OFF your cell phones during the class.</li> <li>3) DO Not TALK during the class please, unless you have a question for me.</li> <li>4) No quizzes make-ups.</li> <li>5) Make up exams are not held without an official signed and approved excuse from the Department Chairman. Please understand that this is a university law and I have no control over it.</li> <li>6) Office hours are the hours I dedicate for you to ask me. If you think they do not suit you, then we can still arrange for a time of our convenience by sending an e-mail to me (you should expect an approval from my side).</li> <li>7) The exams specified on the course syllabus are not subject to negotiations or change once approved by you TODAY. It is your responsibility to inform the other instructors about your assigned exams.</li> <li>8) Files will be posted on e-learning and you are only allowed to contact me through the e-learning email. Contacting me through Facebook is prohibited.</li> <li>9) You are not allowed to post my emails content on Facebook without my prior permission.</li> </ol>

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