



Course Syllabus

Course ID	0902408
Course Title	Microwave Engineering
Prerequisite	
Time & Date	Sun Tue Thu 12:00–1:00pm
Coordinator	-
Instructor	Ass. Prof. Dr. Khaldon Ghaidan E-mail: khldn45@yahoo.com Telephone: ex.273
Office hours	Sun Mon Tue Thu 1:00-3:00 pm
Course Description	Review of Maxwell's equations. Boundary conditions. Transmission lines. Waveguides and resonant cavities, microwave passive devices. Periodic structure and microwave filters. Microwave tubes and antennas.
Course Objectives	<ol style="list-style-type: none">1. Ability to analyze and design circular waveguide and cavity, dielectric waveguide, strip lines and micro strip lines.2. Understand and apply network analysis concepts and derive network parameters.3. Ability to analyze and design impedance matching networks.4. Ability to analyze and design power dividing and combining networks.5. Ability to analyze and design microwave filters.6. Introduce basic properties of ferrimagnetic materials and components.
Course Outcomes	An ability to apply knowledge of mathematics, science, and engineering An ability to design and conduct experiments, to analyze and interpret data An ability to design a system, component, or process to meet desired needs An ability to function on multi-discipline (e) An ability to identify, formulate, and solve engineering problems (f) An understanding of professional and ethical responsibility (g) An ability to communicate effectively (h) The broad education necessary to understand the impact of engineering solutions in a global and societal context

	(i) A recognition of the need for, and an ability to engage in life-long learning (j) A knowledge of contemporary issues (k) An ability to use the techniques, skills, and modern engineering tools necessary for														
Course Topics	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 70%;">1. Introduction to Microwave Applications</td> <td style="width: 30%; text-align: right;">2 Hours</td> </tr> <tr> <td>2. Transmission Lines and Waveguides</td> <td style="text-align: right;">8 Hours</td> </tr> <tr> <td>3. Microwave Network Analysis</td> <td style="text-align: right;">7 Hours</td> </tr> <tr> <td>4. Impedance Matching Networks</td> <td style="text-align: right;">8 Hours</td> </tr> <tr> <td>5. Power Dividers and Directional</td> <td style="text-align: right;">8 Hours</td> </tr> <tr> <td>6. Microwave Filters</td> <td style="text-align: right;">6 Hours</td> </tr> <tr> <td>7. Ferromagnetic Components</td> <td style="text-align: right;">3 Hours</td> </tr> </table> <p style="text-align: center;">Using program Mat lab</p>	1. Introduction to Microwave Applications	2 Hours	2. Transmission Lines and Waveguides	8 Hours	3. Microwave Network Analysis	7 Hours	4. Impedance Matching Networks	8 Hours	5. Power Dividers and Directional	8 Hours	6. Microwave Filters	6 Hours	7. Ferromagnetic Components	3 Hours
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Course Text Book	1. Neville A. M. and Brooks J. J. "Concrete Technology," Longman Scientific and Technical, England, 1987.														
Course References	<ol style="list-style-type: none"> 1. Handout Materials 2. Mamlouk, M. S. and Zaniewski, J. P., "Materials for Civil and Construction Engineers", Pearson Prentice Hall, 2006. 3. "Books of Standards", American Society for Testing and Materials (ASTM), 2005. 4. Neville A. M. "Properties of Concrete," Logman Scientific and Technical, 4th and Final Edition, England 1995. 5. "Highway Materials", Part I and II, American Association of State Highway and Transportation Officials (AASHTO), 2004. 														
Course delivery	Lectures Tutorial Lab Homework Project Computer Internet Industrial Visit														
Course Assessment	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">First</td> <td style="width: 20%; text-align: right;">20%</td> </tr> <tr> <td>Second.....</td> <td style="text-align: right;">20%</td> </tr> <tr> <td>Assessment.....</td> <td style="text-align: right;">10%</td> </tr> <tr> <td>Final.....</td> <td style="text-align: right;">50%</td> </tr> </table>	First	20%	Second.....	20%	Assessment.....	10%	Final.....	50%						
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Updated	Dr.Khaldoon 1/10/2009														

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CO2											
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CO8											
CO9											

ABET a-k Engineering and Technology program outcome

- (a) An ability to apply knowledge of mathematics, science, and engineering
- (b) An ability to design and conduct experiments, to analyze and interpret data
- (c) An ability to design a system, component, or process to meet desired needs
- (d) An ability to function on multi-disciplinary teams
- (e) An ability to identify, formulate, and solve engineering problems
- (f) An understanding of professional and ethical responsibility
- (g) An ability to communicate effectively
- (h) The broad education necessary to understand the impact of engineering solutions in a global and societal context
- (i) A recognition of the need for, and an ability to engage in life-long learning
- (j) A knowledge of contemporary issues
- (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Plagiarism

Deliberate plagiarism is a serious act of academic misconduct. Students may be suspended from the University if they are found to have plagiarized their course work. Whether inadvertent or deliberate, plagiarism includes the following:

- (a) word-for-word copying of sentences or whole paragraphs or presenting of substantial extracts from either paper-based or electronic sources the work or data of others that are published or unpublished (such as books, internal reports, and lecture notes or tapes) without clearly indicating their origin;
- (b) using very close paraphrasing of sentences or whole paragraphs without due acknowledgement in the form of reference to the original work;
- (c) submitting another student’s work in whole or in part;
- (d) using of another person’s ideas, work or research data without acknowledgement;

- (e) copying computer files, algorithms or computer code without clearly indicating their origin;
- (f) submitting work that has been written by someone else on the student's behalf; and
- (g) submitting work that has been derived, in whole or in part, from another student's work by a process of mechanical transformation (e.g., changing variable names in computer programs).