



**MUTAH UNIVERSITY**  
**Faculty of Engineering**  
**Department of Electrical Engineering**



**Course Syllabus**  
**Study Plan 2017: Communication Track**

Course Code	Course Name	Credits	Contact Hours
0401529	Telephony Engineering	3	3 T

### INSTRUCTOR/COORDINATOR

<b>Name</b>	Dr. Saqer S. Alja' Afreh
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<b>Office Hours</b>	13:00-14:00 (Sun)
<b>Classroom Time</b>	11:00-12:00 (Sun, Wed)

### TEXTBOOK

<b>Title</b>	Telecommunication Switching and Networks,
<b>Author/Year/Edition</b>	2nd Edition by P. Gnanasivam

### Other Supplemental Materials

<b>Title</b>	Fundamentals of Telecommunications
<b>Author/Year/Edition</b>	Roger L. Freeman

### SPECIFIC COURSE INFORMATION

#### A. Brief Description of the Content of the Course (Catalog Description)

Introduction to Telecommunications systems; Telephone Handset; Subscriber Loop Design, Switching Systems (TDM), Transmission Media.. Introduction to Microwave links design

#### B. Pre-requisites (P) or Co-requisites (C)

Digital Communications (0401521) (P)

#### C. Course Type (Required or Elective)

Required

### SPECIFIC GOALS

### A. Course Learning Objectives (CLOs)

By the end of this course, the student should be able to:  
**CLO1: Understand** the basic components and operation of telephone handset [1].  
**CLO2: Recognize** different parts of telecommunications networks [1].  
**CLO3: Differentiate** between different telephones switching systems [1].  
**CLO4: Understand** the basic principles of multiplexing techniques, mainly TDM schemes [1].  
**CLO5: Review and compare** between different transmission media [1].  
**CLO6: Analyze RF and Mw** links over different environments [4].

### B. Student Learning Outcomes (SOs) Addressed by the Course

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
✓			✓			

### BRIEF LIST OF TOPICS TO BE COVERED

List of Topics	No. of Weeks	Contact Hours
Chapter 1: Introduction to Telecommunications systems;	2	6
Chapter 2: Telephone Handset;	2	6
Chapter 3: Subscriber Loop Design.	3	9
Chapter 4: Switching Systems (TDM)	3	9
Chapter 5: Transmission Media.	2	6
Chapter 6: Introduction RF and Microwave Links Design	2	6

*Total*     14     42

### EVALUATION

Assessment Tool	Due Date	Weight (%)
Mid Exam	According to the university calendar	30
Course Work (Homeworks, Quizzes, , ...etc.)	One week after being assigned	20
Final Exam	According to the university calendar	50

### ABET's Students Learning Outcomes (Criterion # 3)

Relationship to program outcomes	
<b>ABET 1-7</b>	<b>Engineering Student Outcomes</b>
1	✓ an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

2	an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3	an ability to communicate effectively with a range of audiences.
4	an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5	an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6	an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7	an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.