Faculty of Engineering at Shoubra

University : Benha university

Faculty : Faculty of Engineering at Shoubra

Department : Electrical Engineering Department

1- Course Data

Course Code : ECE346   Course Title : Transmission Lines Techniques Theory   Study Year : Third Year

Specialization :
Teaching Hours:

　　Lecture : 4　　　　　　　　　Tutorial : 2　　　　　　　　　　　　Practical : 0

2- Course Aim

For students undertaking this course, the aims are to:

2.1- This course introduces microwave transmission lines theories and matching techniques.

3- Intended Learning Outcomes of Course (ILOS)

a- Knowledge and Understanding

On completing this course, students will be able to:

a.1 - Define concepts and theories of microwave transmission lines. (a1)

a.2 - Define concepts and theories of sciences, appropriate to microwave transmission lines theories (a2)

a.3 -Describe principles of design including Microwave devices .(a5)

a.4- Demonstrate contemporary engineering topics.(a14)

a.5- List microwave applications. (a24)

b- Intellectual Skills

At the end of this course, the students will be able to:

b- 1- Assess and evaluate the characteristics and performance of Microwave Component.(b6)

b-2- Investigate the failure of Microwave components, systems, and processes. (b7)

c- Professional Skills

On completing this course, the students are expected to be able to:

c- 1-Apply knowledge of mathematics, science, information technology, design, business context and engineering practice to solve engineering problems. (c1)

c-2- Prepare and present technical reports.(c12)

d- General Skills

At the end of this course, the students will be able to:

d- 1- Work in stressful environment and within constraints.(d2)

4- Course Contents

No.	Topics	No of hour
1	Introduction to course and Review Transmission Lines	4
2	Field Analysis of TL	4
3	Reflections , Standing Waves, Quarter Wave transformer	4
4	Introduction to Smith chart	4
5	Matching with lumped element	4
6	Smith chart, single stub matching	4
7	Double stub matching	4
8	Theory of small Reflections	4
9	Binomial multi-section matching transformer	4
10	Tapered line	4
11	Introduction on network analysis	4
12	Z,Y and S matrix	4

5- Teaching and Learning Methods

5.1- modified Lectures

6- Teaching and Learning Methods of Disables

Nothing

7- Student Assessment

a- Student Assessment Methods

1	Mid Term Exam to assess Knowledge and Understanding intellectual
2	Final Exam to assess Knowledge and Understanding intellectual

b- Assessment Schedule

No.	Assessment	Week
1	Mid Term Exam	8
2	Final Exam	15

c- Weighting of Assessments

Assessment	Weight
Mid_Term Examination	33.33 %
Final_Term Examination	66.67 %
Oral Examination	0 %
Practical Examination	0 %
Semester work	0 %
Other types of assessment	0 %
Total	100 %

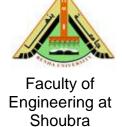## 8- List of References

a- Books

1- Microwave Engineering – David M Pozar, John Wiley, 3e, 2005

- Course Coordinator :   Dr. Jehan Shehata Sami Abbas

Course Instructor

- Head of Department :   Prof. Dr. Sayed Aboo-Elsood Ward

Faculty of
Engineering at
Shoubra

Model No.11A
Course Specifications : Transmission Lines
Techniques Theory

University : Benha university

Faculty : Faculty of Engineering at Shoubra

Department : Electrical Engineering Department

Matrix of Knowledge and Skills of the course

No.	Topics	week	Basic Knowledge	Intellectual Skills	Professional Skills	General Skills
1	Introduction to course and Review Transmission Lines	1	a1, a2, a3, a4, a5	b1, b2	c1, c2	
2	Field Analysis of TL	2	a1, a2, a3, a4, a5	b1, b2	c1, c2	
3	Reflections , Standing Waves, Quarter Wave transformer	3	a1, a2, a3, a4, a5	b1, b2	c1, c2	
4	Introduction to Smith chart	4	a1, a2, a3, a4, a5	b1, b2	c1, c2	
5	Matching with lumped element	5	a1, a2, a3, a4, a5	b1, b2	c1, c2	
6	Smith chart, single stub matching	6	a1, a2, a3, a4, a5	b1, b2	c1, c2	
7	Double stub matching	7	a1, a2, a3, a4, a5	b1, b2	c1, c2	
8	Mid Term Exam	8	a1, a2, a3, a4, a5	b1, b2		d1
9	Theory of small Reflections	9	a1, a2, a3, a4, a5	b1, b2	c1, c2	
10	Binomial multi-section matching transformer	10	a1, a2, a3, a4, a5	b1, b2	c1, c2	
11	Tapered line	11	a1, a2, a3, a4, a5	b1, b2	c1, c2	
12	Introduction on network	12	a1, a2, a3, a4, a5	b1, b2	c1, c2	

	analysis					
13	Z,Y and S matrix	13	a1, a2, a3, a4, a5	b1, b2	c1, c2	
14	Final Exam	14	a1, a2, a3, a4, a5	b1, b2		d1

 - Course Coordinator : **Dr. Jehan Shehata Sami Abbas**
Course Instructor

 - Head of Department : **Prof. Dr. Sayed Aboo-Elsood Ward**