TCET/FRM/IP-02/09 Revision: A

Semester Plan
(Theory)

Semester: V Course: TE-EXTC

Subject: RFMA Class: TE-B

S.No.	Bridge courses/Technology	Duration (Week/hrs)	Modes of Learning	Recommended Sources
1.	**Prerequisite course:** Wave Theory and Propagation	06 Hours	Technology Based learning	Principles of Electromagentics -Sadiku Chapter 2 (Pg. No. 25 -70) Chapter 8(Pg. No.327-370)

Class Room Teaching

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
1		L.1.1	Syllabus orientation	PPT	10/07		
2		L.1.2	Outcome based education details	PPT	13/07		
3	3	L.1.3	DB scale and Classification of antenna and their characteristics	Projector and chalk board	14/07	M3.9.1	
4		L.2.1	Condition for radiation and fundamentals of antenna	Chalk board	17/07	M3.9.2	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
5		L.2.2	Antenna directivity, gain, effective aperture and radiation resistance	Chalk board	18/07	M3.9.4.3	
6		L.2.3	Friss transmission Formula and Numerical	Chalk board	19/07	M3.9.5.17	
7		L.2.4	Vector potential A for an electric current J with retardation	Chalk board	20/07	M3.5	
8		L.3.1	Vector potential F for an magnetic current source M with retardation	Chalk board	24/07	M3.6	
9	4	L.3.2	Concept of Near and Far field and Numerical	Chalk board	25/07	M3.9.4	
10		L.3.3	Derivation of radiation, Induction and electrostatic field of infinitesimal dipole	Chalk board	26/07	M4.8.2	
11		L.3.4	Derivation of radiation, Induction and electrostatic field of half dipole and Radiation resistance	Chalk board	27/07	M4.8.14	
12		L.4.1	Quarter wave mono pole and its radiation resistance	Chalk board	31/07	M4.8.1	
13		L.4.2	Effect of Ground on the radiation of antenna	Chalk board	01/08	M4.2	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
14		L.4.3	Loop antenna its radiation pattern and application	Chalk board	02/08	M4.8.18	
15	1	L.4.4	High frequency behaviour of register, capacitor and inductor and its VI -characteristics	Chalk board	03/08	M1.2	
16		L.5.1	Hazardous of Electromagnetic Radiation.	Chalk board	07/08	M1.1.9	
17		L.5.2	Characteristics, structure and application of coaxial lines and strip lines	Chalk board	08/08	M1.3.2	
18		L.5.3	High frequency behaviour of BJT, FET and Diode its VI - characteristics	Chalk board	09/08	M1.4.1	
19		L.5.4	Micro strip and coplanar lines	Chalk board	10/08	M1.4.2	
20	5	L.6.1	Antenna arrays their application and classification	Chalk board	14/08	M5.9.1	
21		L.6.2	Array of two isotropic point source and End fire array	Chalk board	16/08	M5.9.2	
22		L.7.1	Broadside antenna array and principal of pattern multiplication	Chalk board	24/08	M5.9.5	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
23		L.8.1	Array factor for N element array	Chalk board	30/08	M5.9.3	
24		L.8.2	Non uniform array Binomial and Dolph Tschebyscheff array	Chalk board	31/08	M5.9.4	
25		L.9.1	Numerical on uniform and non uniform array	Chalk board	04/09	M5.9.6	
26		L.9.2	Yagi uda antenna	Chalk board	05/09	M6.1	
27	6	L.9.3	Horn antenna	Chalk board	06/09	M6.9.8	
28		L.9.4	Helical antenna	Chalk board	07/09	M6.9.3	
29		L.10.1	Different type of reflector used in UHF antenna	Chalk board	11/09	M6.9.4	
30		L.10.2	Frequency independent structure and log periodic antenna	Chalk board	12/09	M6.9.1	
31		L.10.3	Micro strip patch antenna	Chalk board	13/09	M6.9.2	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
32	2	L.10.4	Different types of periodic structure, their characteristic impedance and propagation constant	Chalk board	14/09	M2.1	
33		L.11.1	Image Parameter Method and image impedance of Asymmetrical network	Chalk board	18/09	M2.9	
34		L.11.2	Transfer function for two port network	Chalk board	19/09	M2.9	
35		L.11.3	Numerical on designing of composite filter using image parameter method	Chalk board	20/09	M2.9	
36		L.11.4	Insertion loss method	Chalk board	21/09	M2.10	
37		L.12.1	Characteristics of binomial and chebyscheff filter	Chalk board	25/09	M2.11	
38		L.12.2	Numerical on designing of filter using insertion loss method	Chalk board	26/09	M2.10	
39		L.13.1	Filter transformation and impedance change	Chalk board	03/10	M2.1	
40		L.13.2	Frequency scaling, Band stop and Band pass filter	Chalk board	04/10	M2.15	

Sr. No	Module No.	Lesson No.	Topics Planned (Technology to be used)	Teaching Aids Required	Planned /Completion Date	Resource Book Reference	Remarks
41		L.13.3	Richards transformation and Kuroda's identity	Chalk board	05/10	M2.1	
42		L.14.1	Numerical on Richard transformation	Chalk board	12/10	M2.16	
43		L.15.1	Filter design analysis of infinite periodic structure	Chalk board	16/10	M2.2	
44		L.15.2	k- β diagram and wave velocities	Chalk board	17/10	M2.1	
45		L.15.3	Discussion on University paper	Chalk board	18/10	Solution of paper	
Remark:: Course:		Syllabus Coverage:		Practice Session:		Beyond Syllabus:	
No. of (lectures planned)/(lecture taken):							

Bridge courses Objective: Bridging of gaps with respect to prerequisites and industry skills or to carryout research in signal processing field**. (20 Hrs / Semester / student)**

S.No.	Bridge courses/Technology	Duration (Week/hrs)	Modes of Learning	Recommended Sources
1	**Advanced course:** Microwave Theory and Techniques (NPTEL Course)	20 Hours	Technology Based learning	Module No. 1 to 5 http://nptel.ac.in/syllabus/117105029/

Text Books:-

- Costantine A. Balanis, "Antenna Theory Analysis And Design", John Wiley Publication

- David M Pozar, “Microwave Engineering”, John Wieley and Sons, Inc. Hobokenh, New Jersey, Fourth Edition, 2012
- John D. Kraus, “ Antennas”, Tata McGraw Hill publication.

Reference Books:

- Annapurna Das and Sisir K Das, “Microwave Engineering”, Tata McGraw Hill publication, New Delhi, Second Edition, 2009

Digital Reference:

- Wikipedia
- www.wiley.com/communication Technolgy/ Antenna & propagation

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Name & Signature of Faculty	Signature of HOD	Signature of Principal /Dean (Academics)
Date:	Date:	Date:

Note:

1. Plan date and completion date should be in compliance
2. Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
3. Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
4. According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
5. In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
6. Text books and reference books are available in syllabus. Here only additional references w.r.t. non –digital/ digital sources can be written (if applicable)
7. Technology to be used in class room during lecture shall be written below the topic planned within the bracket.