

COURSE TEMPLATE

1.	Department /Centre proposing the course	ELECTRICAL ENGINEERING
2.	Course Title (<i>< 45 characters</i>)	SIGNALS & SYSTEMS
3.	L-T-P structure	3-1-0
4.	Credits	4
5.	Course number	EEL 205
6.	Status (<i>category for program</i>)	Departmental Core & PROGRAMME LINKED EA/ES CORE FOR OTHERS

7.	Pre-requisites (<i>course no./title</i>)	EEL 101
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8.	Status vis-à-vis other courses (<i>give course number/title</i>)	
8.1	Overlap with any UG/PG course of the Dept./Centre	NIL
8.2	Overlap with any UG/PG course of other Dept./Centre	NIL
8.3	Supercedes any existing course	NIL

9.	Not allowed for (<i>indicate program names</i>)	NONE
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10.	Frequency of offering	☒ Every sem ☐ 1 st sem ☐ 2 nd sem ☒ Either sem
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11.	Faculty who will teach the course S. D. JOSHI, BREJESH LALL, SURENDRA PRASAD, RANJAN BOSE	
12.	Will the course require any visiting faculty?	NO

13.	Course objective (<i>about 50 words</i>):
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	TO FAMILIARISE STUDENTS WITH THE BASIC CONCEPTS AND TECHNIQUES FOR ANALYZING DISCRETE AS WELL AS CONTINUOUS TIME SIGNALS AND SYSTEMS
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14.	Course contents <i>(about 100 words) (Include laboratory/design activities):</i> INTRODUCTION, CLASSIFICATION OF SIGNALS AND SYSTEMS, DYNAMIC REPRESENTATION OF LTI SYSTEMS (discrete and continuous time systems), FOURIER ANALYSIS OF DISCRETE-TIME SIGNALS AND SYSTEMS, NYQUIST SAMPLING THEOREM, LAPLACE TRANSFORM, Z-TRANSFORM, OVERVIEW OF RANDOM PROCESSES AND LTI SYSTEM AS SPECTRUM SHAPER.
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15. Lecture Outline *(with topics and number of lectures)*

Module no.	Topic	No. of hours
1	INTRODUCTION: MOTIVATION AND ORIENTATION	1
2	CLASSIFICATIONS OF SIGNALS AND SYSTEMS	5
3	DYNAMIC REPRESENTATION OF LTI SYSTEMS	6
4	FOURIER ANALYSIS OF CONTINUOUS TIME SIGNALS AND SYSTEMS	6
5	FOURIER ANALYSIS OF DISCRETE-TIME SIGNAL & SYSTEMS	6
6	NYQUIST SAMPLING THEOREM	2
7	LAPLACE TRANSFORM	4
8	Z-TRANSFORM	4
9	OVERVIEW OF RANDOM PROCESSES AND LTI SYSTEM AS SPECTRUM SHAPER	8
10		
11		
12		
COURSE TOTAL (14 times 'L')		42

16. Brief description of tutorial activities

SOLVING DIFFERENT APPLICATION PROBLEMS
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17. Brief description of laboratory activities

Moduleno.	Experiment description	No. of hours

1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
COURSE TOTAL (14 times 'P')		

18. Suggested texts and reference materials

STYLE: Author name and initials, Title, Edition, Publisher, Year.

SIGNALS AND SYSTEMS, A.V. OPPENHEIM, A. S. WILSKY AND H. NAWAB
SIGNALS AND SYSTEMS, SIMON HAYKIN, BARRY VAN PEEN

19. Resources required for the course (itemized & student access requirements, if any)

19.1	Software	Xilinx
19.2	Hardware	

19.3	Teaching aides (videos, etc.)	
19.4	Laboratory	
19.5	Equipment	
19.6	Classroom infrastructure	Projection system
19.7	Site visits	

20. Design content of the course *(Percent of student time with examples, if possible)*

20.1	Design-type problems	15%
20.2	Open-ended problems	
20.3	Project-type activity	
20.4	Open-ended laboratory work	
20.5	Others (please specify)	

Date: March 25, 2013

(Signature of the Head of the Department)