



TEACHER LEVEL ATTAINMENT REPORT/COURSE INFORMATION SHEET

Program: - E&TC Engineering	Class: - SE(sem-2)	Div.: - A
Course Name: - Signals & Systems	Course Code: - 204191	Course -2019 Course
Subject Teacher: - Prof Sachin.G.Bagul		A.Y.: - 22-23 SEM-4

Teaching Scheme			Examination Scheme			
Theory	Practical	Tutorial	In-sem	End-sem	Oral/PR	Term Work
3 hrs/week	--	1 hr/week	30	70	--	25
Delivery Method						
Chalk & Talk	ICT Tools	Group Discussion	Industrial Visit	Expert Talk		
✓	✓	----	----	----		

(* Kindly Tick the Methods conducted for this course; you may add any additional delivery method conducted in above column)

Program Outcomes:

PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and





**KALYANI CHARITABLE TRUST'S
LATE G. N. SAPKAL COLLEGE OF ENGINEERING**

Kalyani Hills, Anjaneri-Vadholi, Trimbakeshwar Road, Dist: Nashik-422 212 (India)
Tel: +91-2594-220168/71. Fax: +91-2594-220174
Website: www.sapkalknowledgehub.org, E-mail: gns_engineering@sapkalknowledgehub.com



	norms of the engineering practice.
PO9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PSOs:

PSO1	Understand analyze and develop fundamentals of electronics and Telecommunication in various domains of Analog and Digital systems.
PSO2	Apply standard practices and strategies from the courses related to Microwave, Signal processing, Microcontroller, Embedded, networking and Communication Systems environment to deliver a quality product for business success.
PSO3	Employ Hardware Skills, modern computer languages and platforms in creating innovative career paths to be an entrepreneur.

After completion of course, student will be able to

CO1	Identify, classify basic signals and perform operations on signals.
CO2	Identify, Classify the systems based on their properties in terms of input output relation and in terms of impulse response and will be able to determine the convolution between to signals.
CO3	Analyze and resolve the signals in frequency domain using Fourier series and Fourier Transform.
CO4	Resolve the signals in complex frequency domain using Laplace Transform, and will be able to apply and analyze the LTI systems using Laplace Transforms.
CO5	Define and Describe the probability, random variables and random signals. Compute the probability of a given event, model, compute the CDF and PDF.
CO6	Compute the mean, mean square, variance and standard deviation for given random variables using PDF.

Mapping of CO with POs:

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	--	--	2	2	2	2	--	2	2	2
CO2	--	2	2	1	1	2	2	2	--	2	2	2
CO3	3	2	1	2	2	2	2	2	--	2	2	2
CO4	3	2	2	1	--	2	2	2	2	2	2	2
CO5	3	2	1	2	1	2	2	2	2	2	2	2
CO6	3	2	1	2	1	2	2	2	2	2	2	2
CO	2.33	2	1.16	1.33	1.16	2	2	2	1	2	2	2



Mapping of COs with PSOs:

Course Outcomes	PSO1	PSO2	PSO3
CO1	2	1	2
CO2	2	1	2
CO3	2	2	2
CO4	3	2	2
CO5	2	1	2
CO6	2	1	2
CO	2.16	1.33	2

Note:- Enter correlation levels 1,2 or 3 as defined:

1: Slight(Low) 2: Moderate(Medium) 3: Substantial(High)

A) Direct Assessment (90%):

a) External Assessment (80%): -

Attainment level Vs Target value

Attainment Level	Description
1	30 % students scoring more than University Average marks or target value
2	40 % students scoring more than University Average marks or target value
3	60 % students scoring more than University Average marks or target value

Set Target Value		
Theory	Practical/Oral	Term Work
40	--	25

b) Internal Assessment (20%): -

Attainment level Vs Target value

Attainment Level	Description
1	50% students scoring more than 60% of maximum marks
2	60% students scoring more than 60% of maximum marks
3	70% students scoring more than 60% of maximum marks



Set Target Value	
Unit Test	Term Work
60%	18

Course Outcome Attainment:

External Assessment:

Theory (%)						Oral / Practical (%)						Term Work (%)					
CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6
67.19%	67.19%	67.19%	67.19%	67.19%	67.19%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Internal Assessment:

Unit Test (%)						Term Work (%)					
CO1	CO2	CO3	CO4	CO5	CO6	CO1	CO2	CO3	CO4	CO5	CO6
89.06%	96.88%	95.31%	96.88%	96.88%	100.00%	98.44%	98.44%	98.44%	98.44%	98.44%	98.44%

Indirect Assessment:

Course Exit Survey (%)					
CO1	CO2	CO3	CO4	CO5	CO6
96.90	96.90	93.75	92.19	90.91	92.19

CO attainment by external assessment

External assessment tool	CO Attainment
TH exam	3
OR/PR exam	NA
TW exam	NA
Average	3

CO attainment by internal assessment

Internal assessment tool	CO Attainment
Unit test	3
PR/Term work	3
Average	3

Direct CO attainment is then computed as

$$= 0.8 \times \text{CO attainment level in university examination} \\ + 0.2 \times \text{CO attainment level in Internal assessment}$$

$$= 0.8 \times 3 + 0.2 \times 3$$

$$= 3$$



CO attainment by course exit survey

Indirect assessment tool	CO Attainment
Course exit survey	3

Overall CO attainment is then computed as

$$= 0.9 \times \text{Direct CO attainment} + 0.1 \times \text{Indirect CO attainment}$$

$$= 0.9 \times 3 + 0.1 \times 3$$

$$= 3$$

Result of Evaluation of PO's:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO	2.33	2	1.16	1.33	1.16	2	2	2	1	2	2	2

Result of Evaluation of PSO's:

Course	PSO1	PSO2	PSO3
CO	2.16	1.33	2

Remark:

Target is achieved.

Observation:

Students secured less marks in endsem exam.

Action Plan:

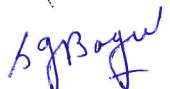
More practice is to needed for solving the numerical in theory paper.

Target Set for A.Y. 2023-24

Target Value		
Theory	Oral /Practical	Term Work
50	NA	20


Prof.S.G.Bagul

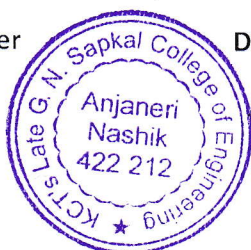
Subject Teacher

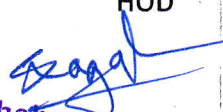

Prof.S.G.Bagul

Dept. CO/PO Coordinator


Prof.S.B.Borse

HOD




Prof.(Dr.) Sahebrao B. Baga
Principal
Late G. N. Sapkal College of Engineering
Anjaneri, Nashik-422 213.