Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune

(Maharashtra)

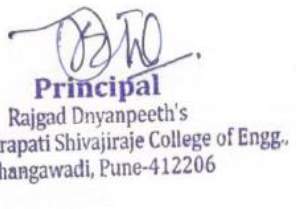
Criterion 2: Teaching Learning & Evaluation

Key Indicator:2.3 Teaching and Learning Process

2.3.4 Innovation and creativity in Teaching-Learning

Sr.No	Sample Documents	Remark
1	Power Point Presentation Slides for Theory Subject, Provision of Notes	
2	NPTEL Videos of Theory Subject made avalable	
3	Information and Communication Technology (ICT) Based Teaching Learning	
4	Sample Tutorial to be Solved in Session for M-III subject	
5	ERP for communication with students	
6	Library Facilities:E-resources,Delnet, Eshodsindhu and Knimbus	
7	Guest Lecture for enhancing Expertise	
8	Quiz Competition	
9	Internet Leased line	

10	FDP,Seminar,Workshop for Faculty Knowledge Improvement	
11	Lab Manual	
12	Industrial Visit	
13	Digital Social Learning	
	a) Sample of Gmail groups with Students,	
	b) Whatsapp Group with students	



PPT Slides for Broadband Communication System B.E E&TC

SUBJECT : BROADBAND COMMUNICATION SYSTEMS. CLASS: B.E E&TC

Unit-I
Light wave Systems components

Introduction :

- An optical fiber can transmit the information from one end to other. This transmission takes place in the form of light rays.
- It is having a number of advantages as compared to conventional electrical communication system.
- Optical fiber communication system is where, the transfer of information is in the form of light which is propagating within a optical fiber.
- Major two parts in any communication system are transmitter and receiver. Almost all the blocks in transmitter and receiver are same in any communication system.

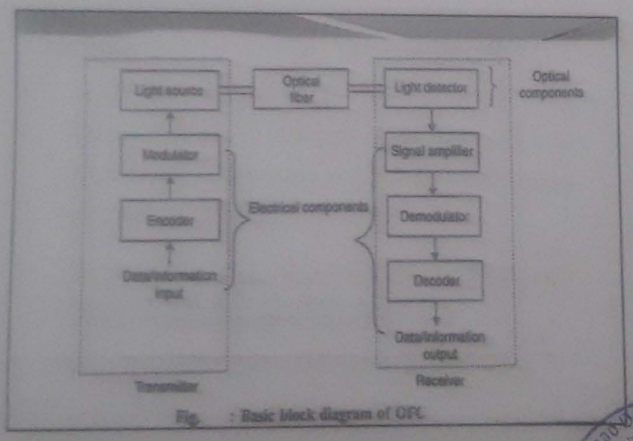


Fig. : Basic block diagram of OFC

Figure shows block diagram of Optical fiber communication system. Block diagram is divided into two parts: Transmitter and Receiver.

Transmitter :

1. **Data/Information input :**

- The data or information which needs to be transmitted over OFC (Optical Fiber Communication system) is first encoded.
- This information may be anything from text to picture, which should be in the form of train of pulses just like serial data.

2. **Encoder :**

- Coding of this train of pulses or serial data is done in encoder block, there are various ways of encoding the signal.
- Coding in necessary for recuring the data transmitted. Some techniques like [illegible] delay modulation (Miller) codes.

3. Modulator :

- [illegible] is carried out in this block.
- [illegible] modulation techniques for either [illegible] PCM (Pulse Code Modulation), ADM (Adaptive Delta Modulation)] [illegible] direct Intensity Modulation (IM) or Frequency Modulation (FM).

4. Light/Optic source :

- Conversion of electrical signal to light signal is done in this block, which has some light sources, widely used for OFC are LED (infrared or visible), LASER (Ruby, He-Ne).
- Selection of the optic device depends on power to be transmitted and bandwidth of the signal.

5. Transmission media-optical fiber :

- Information to be transmitted is now in optical or light form, the information is carried to the receiver through optical fiber.

Receiver :

1. Light detectors :

- The light emerging from the far end of the transmission medium (fiber optic cable) is converted back into electrical signal by an optical detector positioned at the input of receiver terminal.
- Some type of light detectors are photodiode (p-i-n or avalanche), overall performance of the system depends on light detectors.
- Noise in the signal is the major constraint while selecting light detectors.

2. Signal amplifier :

- Electrical signal from the photodetector is amplified prior to decoder and demodulator. Amplifier needs to have proper SNR (signal to noise ratio).
- Some types of amplifiers used are low input impedance voltage amplifier, FET common source amplifier, op-amp transimpedance amplifiers.

3. Demodulators and decoders :

- The modulated signal which is amplified by signal amplifier is then demodulated and decoded at the two blocks

- After demodulation and decoding what we will get out is the data / information which was transmitted.

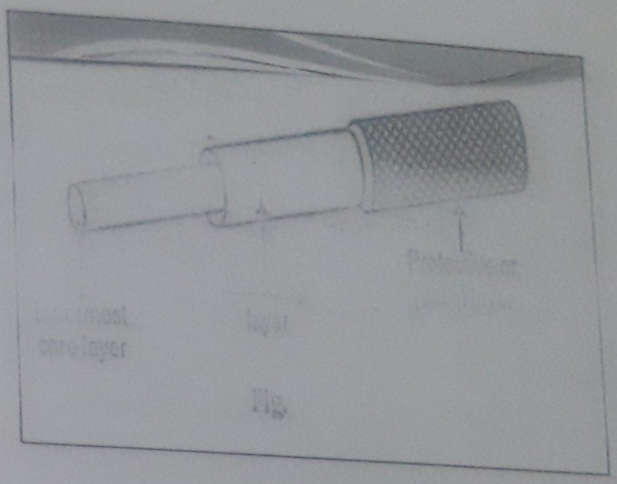


Fig.

i) Core :

- Core is the innermost part of optical fiber made up of either glass or plastic. This is an actual fiber and has a property of passing or conducting an optical beam, normally it is cylindrical in form.
- It confines electromagnetic energy in the form of light and guides the light in a direction parallel to its axis.
- The structure of core defines the transmission properties of an optical waveguide.

ii) Cladding :

- Core is surrounded by its own cladding a glass or plastic coating, which has different optical properties than core normally refractive index of cladding is less than that of core, cladding is not necessary to propagate light along the core of fiber.
- But it is necessary to reduce scattering loss and gives mechanical strength to the fiber, also it protects core from absorbing surface contamination.

iii) **Jacket :**

- Fibers are encapsulated in an elastic, abrasion resistant plastic material called

Operating wavelengths of optical fiber :

- An optical region forms an important region in electromagnetic spectrum. Optical

this band of wavelength, an optical sources and detectors were easily available.

- Similarly an attenuation of data passing through optical fiber was also low. This particular band of wavelength is also called as first window.
- Later on the manufacturers were able to fabricate optical waveguides in the 1100 nm to 1600 nm region. These waveguides were having very low losses. Here two windows are present.
- The second window is centered around 1300 nm and the third window is centered around 1500 nm as shown in Fig

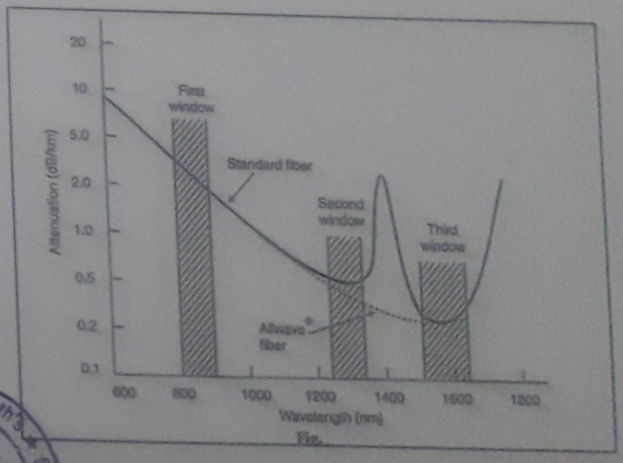


Fig.

UNIT - III :

Introduction to OS & Process Management

Architecture :

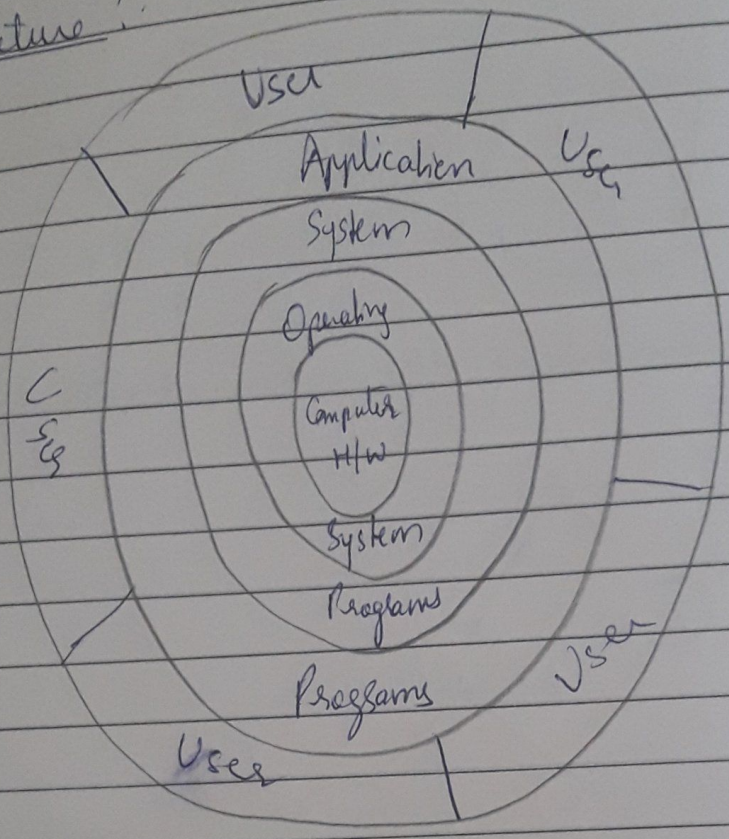


Fig: Components of a computer system.

The o.s is an interface betⁿ users & h/w of a computer system. It is a system software which may be viewed as an organized collection of s/w consisting of procedures for operating a computer & providing an environment for execution of programs.

OS can be classified as :-
1) Resource allocation & related functions
2) User interface functions.

1) Resource allocation & related functions :

The resource allocation function allocates resources (or

or User created resources like files.

2) Resource allocation criteria depends on whether a resource is a system resource or a user created resource.

3) If system resource then allocation is driven by efficiency of resource utilization.

4) User created resources is based on set of constraints specified by its creator. & typically embodies

Two main types of Resource allocation:-

a) Partitioning of resources

b) Allocation from a pool.

→ Here OS decides a priori as to which resources should be allocated to a user computation. This is static allocation. (Allocation is made before the execution of a program) (Suboptimal utilization resources takes place in this case ∵ allocation is made on the basis perceived needs of a program)

→ Here OS maintains a common pool of resource & allocates from this pool on need basis. ie resource allocation is only when a program raises a request for a resource. This is dynamic allocation. (Allocation takes place during execution of a program)

OF the two (Static & Dynamic) which is

Introduction to O.S (UNIT-III)

An O.S performs all basic tasks like managing file, process and memory. Thus O.S acts as a manager of all the resources i.e resource manager. Thus O.S acts as an interface b/t user & m/c. It is a System software which can be viewed as collection of software consisting of procedures for operating a computer & providing an environment for execution of programs.

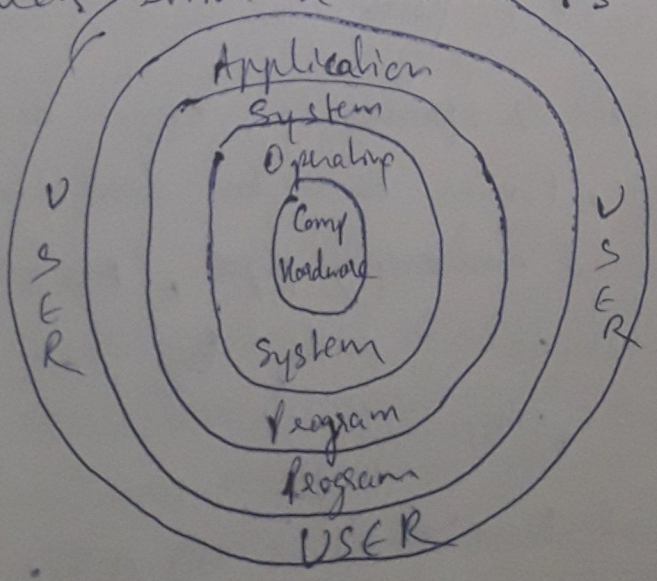
Need of O.S →

1) Efficient utilization of resources
2) Changes in arch of computer.
3) New user requirements.

Eg's of Resources :-

(1) Memory (2) Processor (3) File system
(4) I/O device.

Decision of who will get the resource & for how much time & when is governed by O.S



Functions of O.S :-

(1) Manage & allocate resource in efficient way.
(2) Act as interface b/t user & comp hardware
(3) Makes computer more convinient to use.

The O.S as a User / Computer Interface

The os provides services in following areas:-

(1) Program development :- Utility programs namely
① Editor ② Debugger 3) Compiler 4) Interpreter
⑤ Linker ⑥ Loader.

(2) Program Execution :-
O.S handles loading & scheduling of programs.
Activities involved :-
① Loading code (prog.) & data
② Allocate resources
③ Initialize file & I/O device.

(3) I/O operation :-
Program require I/O. User cannot control I/O devices.
O.S provides a uniform interface & hides details of I/O dev
from the user.

(4) File System manipulation :-
O.S provides system calls for manipulation of files. Details
of underlying secondary storage remain hidden from user.
In case of multiuser environment, o.s provides protection
mechanism to control access to files.

(5) Communication :- Both 2 processes. Comm necessary
for exchange of i/o. Comm can be done in many
ways namely :- shared memory, pipe, Message passing
Also 2 processes communicating may be on same
Computer or different computer.

Resource sharing & protection :- done by o.s.
In multiprogramming → process cannot interfere with
each other. Protection involves ensuring that
all accesses to the system resources is controlled

(8) Resource allocation :-
done by O.S.
Resource Eg's → Processor, File storage, Memory, I/O device
When multiple users run their programs resources must be allocated to them

(9) Accounting :- O.S keeps track of which user & for how long the resource remains allocated. Usage stats are monitored for fine tuning comp system

7.1.1(b) The O.S as Resource Manager :-

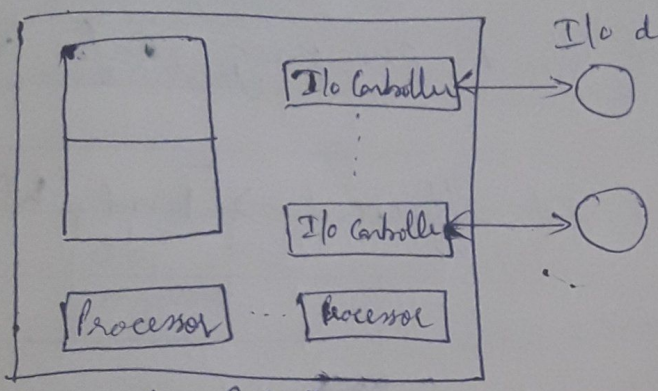


Fig:- O.S as resource manager.

Main resources are :-
1. Memory
2. I/o device
3. Processor

Why resources are required :- For storing & running of programs

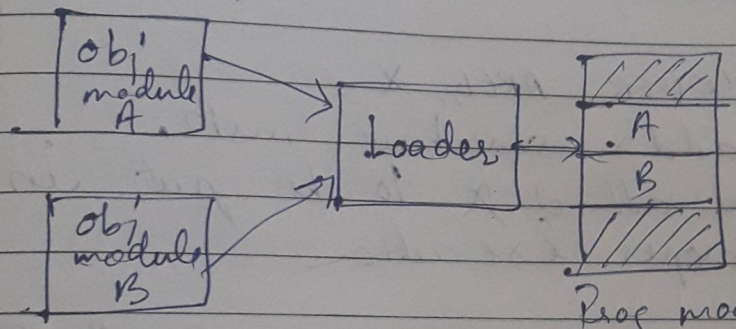
(1) When multiple users or multiple jobs are running at same time, resources need to be allocated.
(2) O.S itself is a program that directs processor in the use of other resources & also the timing of its execution of other programs
(3) In between, O.S released the CPU control for prog execution
(4) Small portion of O.S i.e kernel resides in main memory
(5) Allocation of main memory jointly controlled by O.S & memory management hardware
(6) I/o device usage by particular process decided by
(7) Allocation of processor to particular prog "

PAGE :
DATE : / /

Loader

SP converted to obj program by Assembler & Computer.
Loader accepts obj code as input & initiates execution.
Loader functions:-

1) Allocation → allocation of space in main memory
2) Linking → obj modules linked with each other
3) Relocation → Adjust addr dependent loc's.
4) Loading → load m/c inst's & data in main memory



Prog modules A & B are loaded in mem after linking.
Now its ready for execution

Eg: General loading scheme:

What is linking:-

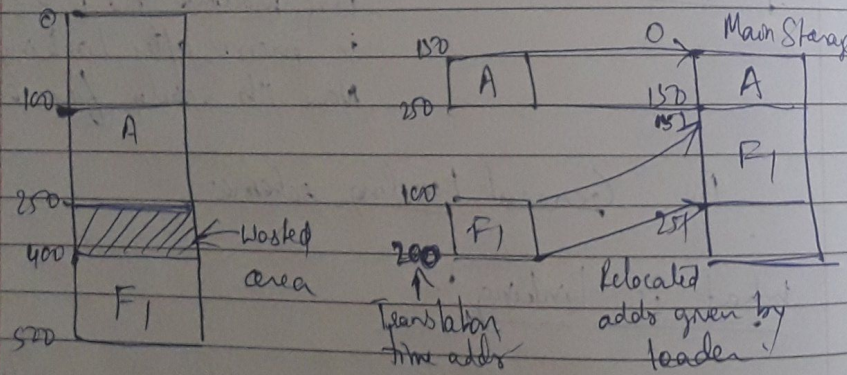
Linking process makes addr of modules known to each other so that transfer of control takes place during execution.

Passing of parameter is handled by linker.
By value or By reference.

Every public addr should have same addr in every module.
We can define external variable in one module & use it in another module. (Note: Addr of external variable should be same in every module).

Relocation:-
Modifying the addr used in the addr sensitive instr^n of a prog such that the prog can execute correctly from any designated area of memory.

Eg: MOVER, AREG, X
Its an addr sensitive instr^n.
Here actual addr of X to be put in instr^n for proper execution

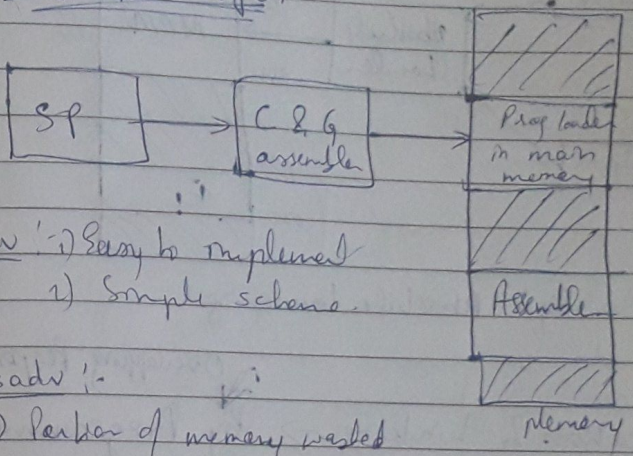


Case I: A ⇒ 100 to 250
F1 ⇒ 400 to 520
Result ⇒ Area wastage in Memory

Fig: Case II: Overlap of A & F1
∴ Relocation

Loading Schemes:-

(1) Compile & go:-



Adv: 1) Easy to implement
2) Simple scheme.

Disadv:-
1) Portion of memory wasted occupied by assembler.
2) Re-translation required every time
3) Difficult to handle multiple segment.
4) Difficult to develop modular prog.

(2) General loading Scheme:-

O/p of loader saved in file. This file can be loaded & executed whenever user wants to run prog.
ie. We create intermediate file.

All dis-adv of compile & go are overcome

NPTEL Online Course Participation Of Civil students

Roll No: NPTEL19ME01S11740685

To
PAWAR MATHAN KUMAR
AT.POST-SUPA TAL- PARNER DIST-
AHAMDNAGER STATE - MAHARASHTRA
SUPA
AHMEDNAGAR
MAHARASHTRA
412205
PH. NO :9822583871

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully completed the course
<40	No Certificate

No. of credits recommended by NPTEL:2

NPTEL Online Certification

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This certificate is awarded to

PAWAR MATHAN KUMAR

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Engineering Mechanics - Statics and Dynamics

with a consolidated score of **41** %

Online Assignments	17.29/25	Proctored Exam	24/75

Total number of candidates certified in this course: **343**

Prof. A. Ramesh
Chairman
Centre for Continuing Education, IITM

Jan-Mar 2019
(8 week course)

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

Indian Institute of Technology Madras

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Roll No:NPTEL18CE26S21860576

To

DIPTI CHANDRAKANT JAGTAP
FLAT NO.3 ,ASHLESHA BUILDING,
KEDARESHWAR TARANGAN RESIDENCY, PALSHI
RAOD
SHIRWAL
SATARA
MAHARASHTRA
412801
PH. NO :9922878491

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:3

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

DIPTI CHANDRAKANT JAGTAP

for successfully completing the course

Wastewater Treatment and Recycling

with a consolidated score of **52** %

Online Assignments	12.91/25	Proctored Exam	39/75

Total number of candidates certified in this course: **592**

Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Jul-Oct 2018
(12 week course)

A. Goswami

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

Roll No:NPTEL18CE26S21860674

To

DIPAK POPAT JAVALE
101 HINGANGAON
HINGANGAON
PUNE
MAHARASHTRA
413106
PH. NO :9975617747

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:3

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

DIPAK POPAT JAVALE

for successfully completing the course

Wastewater Treatment and Recycling

with a consolidated score of **50** %

Online Assignments	13.94/25	Proctored Exam	36/75

Total number of candidates certified in this course: **592**

Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Jul-Oct 2018
(12 week course)

A. Goswami

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur

Indian Institute of Technology Kharagpur

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Roll No:NPTEL18ME61S11710641

To

NAGRAJ HIREMATH
A/P- NAVE PARGAON, TAL- HATKANANGLE,
DIST-KOLHAPUR
PARGAON
KOLHAPUR
MAHARASHTRA
416113
PH. NO :7798695963

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:2

Elite

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

NAGRAJ HIREMATH

for successfully completing the course

Robotics

with a consolidated score of **66** %

Online Assignments	22.92/25	Proctored Exam	43.5/75

Total number of candidates certified in this course: **1069**

Prof. Anupam Basu
NPTEL Coordinator
IIT Kharagpur

Aug-Sep 2018
(8 week course)

A. Goswami

Prof. Adrijit Goswami
Dean
Continuing Education, IIT Kharagpur

Indian Institute of Technology Kharagpur

FREE ONLINE EDUCATION swayam शिक्षित भारत, उन्नत भारत

Roll No:NPTEL18MG41S11710354

To

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FLAT NO.3 ,ASHLESHA BUILDING,
KEDARESHWAR TARANGAN RESIDENCY, PALSHI
RAOD
SHIRWAL
SATARA
MAHARASHTRA
412801
PH. NO :9922878491

Score	Type of Certificate
>=90	Elite + Gold Medal
60-89	Elite
40-59	Successfully Completed the course
<40	No Certificate

No. of credits recommended by NPTEL:2

NPTEL Online Certification

(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to

DIPTI CHANDRAKANT JAGTAP

for successfully completing the course

Introduction to Operations Research

with a consolidated score of **41** %

Online Assignments	17.25/25	Proctored Exam	23.25/75

Total number of candidates certified in this course: **357**

Prof. A. Ramesh
Chairman
Center for Continuing Education, IITM

Aug-Sep 2018
(8 week course)

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

Indian Institute of Technology Madras

NPTEL Links for Internet Of Things B.E E&TC

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

DEPARTMENT OF E & TC ENGINEERING

UNIT 1 FUNDAMENTALS OF IOT

https://youtu.be/WUYAjxnwjU4 NPTEL DR SUDEEP MISHRA

https://youtu.be/BXDxYh1EV2w NPTEL IOT DR SUDEEP MISHRA

https://youtu.be/Am9SW1T_Qvs Interoperability in IoT

https://youtu.be/UrwbeOIlc68 Introduction to IoT for Beginners

UNIT 2 SENSOR NETWORKS

https://youtu.be/GUSrkWJ_Z2g NPTEL DR SUDEEP MISHRA

https://youtu.be/e7jmXVxqS8s CEC UGC AMRITPAL KAUR

https://youtu.be/z3VEZPwl5gA SENSING

https://youtu.be/SXz0XR68dwE ACTUATING

Unit 3 Wireless Technologies for IoT

https://youtu.be/QE-GmtXIKGs MODERN WIRELESS TECHNOLOGIES IN IOT

https://youtu.be/dn4631u2Zxg ZIGBEE ARCH BASICS

UNIT 4 IP based Protocols for IoT

https://youtu.be/Wve8n8Sop_o 6LowPAN

https://youtu.be/iR8ve5tTWAA IPv6

https://youtu.be/SldYZRS8JFg IPv4

https://youtu.be/tP84bg_NnMQ MQTT

https://youtu.be/hlx-KPzcXG4 MQTT

UNIT 5 DATA HANDLING AND ANALYTICS

https://youtu.be/zez2Tv-bcXY BIG DATA

UNIT 6 APPLICATIONS OF IoT

https://youtu.be/Bv7PXrvpLNs 10 Top IoT projects

https://youtu.be/54to8mQkclY IoT Projects

Asst. Prof T.S.Zende

Subject Teacher

Rajgad Dnyanpeeth's Shri Chhatrapati Shivajiraje College of Engg. DTE:6324 SPPU:4071 Dhangawadi Pune 412206

Prof T.M.Dudhane

HOD

Head of Department
Dept. of E& TC Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

RajgadDnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

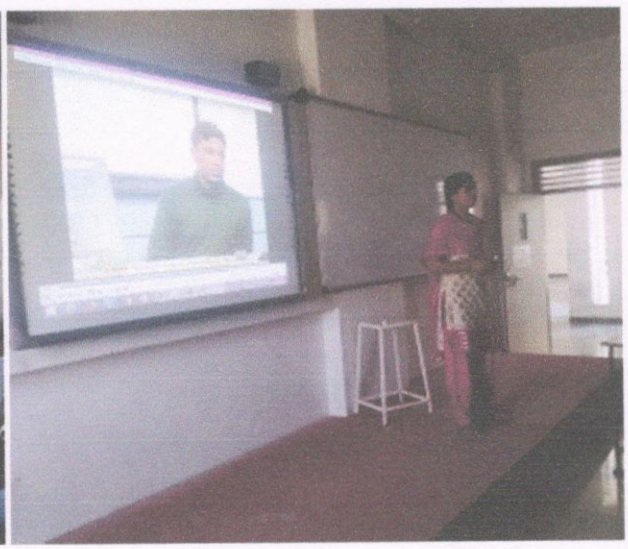
S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune (Maharashtra)

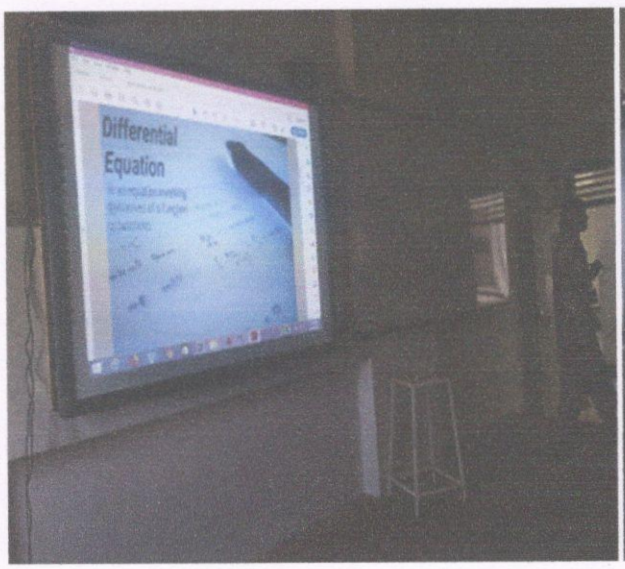
ICT Utilization during Lecture F.E Class

Innovative teaching learning process has seen much advancement among which information and communication (ICT) boards are most popularly gaining recognition.

The key features involved are Video Lectures with good audio system can be presented to the class during lectures; various pictures from internet can be extracted for study or explanation purpose. Data from Laptop/Desktop can be shown via ICT boards during Lecture in class.

Photos during conduction of lectures using ICT facility





Rajgad Dnyanpeeth's ★ Shri Chhatrapati Shivajiraje College of Engg. ★
DTE:6324
SPPU:4071
Dhangawadi
Pune
412206

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

Date: 11/01/18
Engg Mathematics-III.

Tutorial No. 1

Submit before: 25/01/18
S.E Comp

LINEAR DIFFERENTIAL EQUATION WITH CONSTANT COEFFICIENTS

Q.1 Solve the following LDE's.

1. $(D^2-1)y = e^{-x}sine^{-x} + \cos e^{-x}$.
2. $(D^4-4D^3+6D^2-4D+1)y = e^x + 2^x + \frac{1}{3}$.
3. $(D^2-6D+9)y = \frac{e^{3x}}{x^2}$ $(Solve\ by\ MVOP)$
4. $x^2\frac{d^2y}{dx^2} - x\frac{dy}{dx} + 4y = \cos(logx) + x\sin(logx)$
5. $\frac{dx}{x^2(y-z)} = \frac{dy}{y^2(z-x)} = \frac{dz}{z^2(x-y)}$.

Q.2 Fill in the blanks with justification.

1. The solution of $\frac{d^3y}{dx^3} + y = 0$ is ----------.
2. The particular integral of differential equation $(D-2)^3y = e^{2x} + 3^x$ is----------.
3. The differential equation $(3x+2)^2\frac{d^2y}{dx^2} + 3(3x+1)\frac{dy}{dx} - 36y = \frac{1}{3}[(3x+2)^2 - 1]$ on putting 3x+2=e^z and putting D = $\frac{d}{dz}$ is transformed into ----------.
4. For the simultaneous linear differential equation;
   $\frac{dx}{dt} + 5x - 2y = t$,
   $\frac{dy}{dt} + 2x + y = 0$ Solution of x using D= $\frac{d}{dt}$ is obtained from ----------.
5. Considering first two ratio of the symmetrical simultaneous differential equation $\frac{dx}{y^2} = \frac{dy}{x^2} = \frac{dz}{x^2y^2z^2}$. One of the relations in the solution of differential equation is ------.

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

Date: 01/02/18
Engg Mathematics-III.

Tutorial No.2

Submit before:15/02/18
S.E Comp

FOURIER TRANFORM AND Z-TRANSFORM

Q.1 Solve the following.

1. Find Fourier sine transform of $\begin{cases} 1, & 0 \le x \le 1 \\ 0, & x > 1 \end{cases}$ and hence evaluate $\int_0^\infty \frac{\sin^3 x}{x}\, dx$
2. Establish the representation: $e^{-x}\sin x = \frac{2}{\pi}\int_0^\infty \frac{2\lambda \sin \lambda x}{(\lambda^4+4)} d\lambda.\ x > 0$
3. Find $f(k)$ if $F(z) = \frac{z^2}{\left(z-\frac{1}{4}\right)\left(z-\frac{1}{5}\right)}$ and $\frac{1}{5} < |z| < \frac{1}{4}$
4. Find $Z^{-1}\left(\frac{10z}{(z-1)(z-2)}\right)$, *by inversion integral method.*
5. Obtain $f(k)$ *given that* $f(k+2) + 3f(k+1) + 2f(k) = 0,\ f(0) = 0, f(1) = 1$

Q.2 Fill in the blanks with justification.

1. In the Fourier integral representation of $\frac{1}{2\pi}\int_{-\infty}^{\infty}\left(\frac{e^{-i\lambda\pi}+1}{1-\lambda^2}\right)e^{i\lambda x} d\lambda = \begin{cases} \sin x, & 0 < x < \pi \\ 0, & x < 0 \text{ and } x > \pi \end{cases}$, $F(\lambda)$ *is* $---$
2. The Fourier transform $F(\lambda)$ *of* $f(x) = \begin{cases} x - x^2, x > 0 \\ 0, x < 0 \end{cases}$ *is* $---$.
3. If $f(x) = \begin{cases} x, 0 < x < 1 \\ 0, x > 1 \end{cases}$ then Fourier sine transform $F_s(\lambda)$ *of* $f(x)$ *is given by* $---$
4. If $f(k) = 2_{C_k}, 0 \le k \le 2$, *then it's* Z transform is given by -----.
5. If $|z| > 3$ *then* $z^{-1}\left(\frac{z^2}{(z-3)^2}\right)$ is given by --------.

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

Date: 15/02/18
Engg Mathematics-III.

Tutorial No.3

Submit before:01/03/18
S.E Comp

STATISTICS

Q.1 Solve the following.

1. The first four moments of a distribution about the value 4 of the variables are -1.5, 17, -30, 108. Find central moments, β_1, β_2.

2. Calculate coefficient of correlation for the following data

X	10	14	18	2	22	30
Y	18	12	24	6	30	36

3. The regression equations are $8x - 10y + 66 = 0$ and $40x - 18y = 214$. The value of variance of x is 9. Find $\bar{x}, \bar{y}, r(x, y), \sigma_y$.

4. Obtain regression lines for following data:

X	6	2	10	4	8
Y	9	11	5	8	7

5. By the method of least squares, find the straight line that best fits the following data:

X	1	2	3	4	5
Y	14	27	40	55	68

Q.2 Fill in the blanks with justification.

1. Coefficient of variation of the data 1,3,5,7,9 is……..

2. The four moments of a distribution about the value 2 are -2, 12, -20 and 100. Forth moment about mean is……

3. Least square fit for the curve $y = ax^b$ to the following data is……

X	1	2	3
Y	3	12	27

4. Given the following data $r = 0.5, \sum xy = 350, \sigma_x = 1, \sigma_y = 4, \bar{x} = 3, \bar{y} = 4$. The value of 'n' is……

5. Line of regression y on x is $8x - 10y + 66 = 0$. Line of regression x on y is $40x - 18y - 214 = 0$. The value of variance of x is 9. The standard deviation of y is equal to……

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

Date: 22/02/18 — **Tutorial No.4** — Submit before:08/03/18

Engg Mathematics-III. — S.E Comp

PROBABILITY

Q.1 Solve the following.

1. The incidence of a certain disease is such that on the average 20% of workers suffer from it. If 10 workers are selected at random, find the probability that:
   i) Exactly 2 workers suffer from disease.
   ii) Not more than 2 workers suffer.
2. A random sample of 200 screws is drawn from a population which represents size of screws. If a sample is normally distributed with a mean 3.15cm and S.D 0.025 cm, find expected number of screws whose size falls between 3.12cm and 3.2cm
   [Given: For z=1.2, area=0.3849, for z=2, area=0.4772]
3. If the probability that a concrete cube fails is 0.001. Determine the probability that out of 1000 cubes:
   i) Exactly two fails
   ii) More than one cubes will fail
4. Suppose heights of students follows normal distribution with mean 190 cm and variance 80 cm^2. In a school of 1000 students, how many would you expect to be above 200 cm tall? (Given that: A(z>1.1180)=0.13136).
5. A manufacturer of electronic goods has 4% of his product defective. He sells the articles in packets of 300 and guarantees 90% good quality. Determine the probability that a particular packet will violate the guarantee.

Q.2 Fill in the blanks with justification.

1. The mean and variance of binomial distribution are 6 and 2 respectively. $P(r \geq 2)$ is …
2. In a poisson's distribution $P(r = 1) = 2P(r = 2)$ then $P(r = 3)$=……
3. X is normally distributed. The mean of X is 15 and standard deviation 3. Given that for z=1, A=0.3413, $P(X \geq 18)$ is given by ……
4. In experiment of pea breeding, the observed frequencies are 222, 120, 32, 150 and expected frequencies are 323, 81, 81, 40, then χ_3^2 has value……
5. In experiment on pea breeding, the observed frequencies are 222, 120, 32, 150 and theory predicts that the frequencies should be in proportion 8:2:2:1. Then the expected frequencies are……..

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

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Engg Mathematics-III.

Tutorial No.5

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S.E Comp

VECTOR CALCULUS

Q.1 Solve the following.

1. Find directional derivative of $xy^2 + yz^3$ at (2,-1,1) along the line $2(x-2) = (y+1) = (z-1)$
2. Show that: $\bar{F} = (y\sin z - \sin x)\bar{\imath} + (x\sin z + 2yz)\bar{\jmath} + (xy\cos z + y^2)\bar{k}$ is irrotational and hence find scalar potential ϕ such that $\bar{F} = \nabla\Phi$.
3. Prove the following:
   i) $\nabla^4(r^2 \log r) = \frac{6}{r^2}$
   ii) $\nabla.\left[r\nabla\frac{1}{r^5}\right] = \frac{15}{r^6}$
   iii) $\nabla \times \left(\frac{\bar{a}\times\bar{r}}{r^n}\right) = \frac{(2-n)}{r^n}\bar{a} + \frac{n}{r^{n+2}}(\bar{a}.\bar{r})\bar{r}$
4. Show that the vector field $f(r)\bar{r}$ is always irrotational and determine $f(r)$ such that the field is solenoidal also. Also find $f(r)$ such that $\nabla^2 f(r) = 0$.
5. Evaluate $\int_c \bar{F}.d\bar{r}$ *for* $\bar{F} = (2y+3)\bar{\imath} + xy\bar{\jmath} + (yz-x)\,\bar{k}$ along the following paths :
   i) $x^2 = 2t^2, y = t, z = t^3$ *from* $t = 0$ *to* $t = 1$.
   ii) Straight line from (0,0,0) to (0,0,1) then to (0,1,1) to (2,1,1)
6. Find the work done In moving a particle along
   $x = a\cos\theta, y = a\sin\theta, z = b\theta$ *from* $\theta = \frac{\pi}{4}$ *to* $\frac{\pi}{2}$ under a field of force given by
   $\bar{F} = -3a\sin^2\theta\cos\theta\bar{\imath} + a(2\sin\theta - 3\sin^3\theta)\bar{\jmath} + b\sin 2\theta\bar{k}$
7. Evaluate $\iint_s (y^2z^2\bar{\imath} + z^2x^2\bar{\jmath} + x^2y^2\bar{k}).d\bar{s}$, *where* S is the surface of the sphere $x^2 + y^2 + z^2 = a^2$ in the positive octant.
8. Show that $\iint \frac{\bar{r}}{r^3}.\hat{n}\,dS = 0$
9. Use Stoke's theorem to evaluate $\int_c (4y\bar{\imath} + 2z\bar{\jmath} + 6y\bar{k}).d\bar{r}$, where C is the curve of intersection of $x^2 + y^2 + z^2 = 2z$ and x = z - 1.
10. Apply Stoke's theorem to prove that $\int_c (y\bar{\imath} + z\bar{\jmath} + x\bar{k}).d\bar{r} = -2\sqrt{2}\,\pi a^2$ where C is the curve given by $x^2 + y^2 + z^2 - 2ax - 2ay + 0, x + y = 2a$.

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

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Engg Mathematics-III.

Tutorial No.6

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S.E Comp

COMPLEX VARIABLES

Q.1 Solve the following.

1. Show that $u = y^3 - 3x^2y$ is harmonic function. Find it's harmonic conjugate and corresponding analytic function *f(z)* in terms of *z*

2. Use Cauchy's integral formula to evaluate: $\int_C \frac{2z^2+z+5}{(z-3/2)^2} dz$, where C is $\frac{x^2}{4} + \frac{y^2}{9} = 1$.

3. $\int_C \frac{z^2+cos^2 z}{(z-\frac{\pi}{4})^3} dz$, where C is a circle $x^2 + y^2 = 1$

4. Evaluate using residue theorem $\int_C \frac{2z^2+2z+1}{(z+1)^3(z-3)} dz$, where C is contour $|z + 1| = 2$

5. Find the bilinear transformation which maps the points $z = -1, 0, 1$ on to the points $w = 0, i, 3i$

6. Find the map of the circle $|z - i| = 1$ under the transformation $w = \frac{1}{z}$ into *w* plane

7. Show that the transformation $w = \sin z$ transforms the straight line $x = C$ of *z* plane into hyperbolas in the *w* plane.

Tutorial No. 1

Linear Differential Equation With Constant Coefficients.

Q.1. Solve the following LDE's.

1. $(D^2-1)y = e^{-x}\sin e^{-x} + \cos e^{-x}$.

→ Let A.E. is,

$D^2-1=0$

$\therefore (D+1)(D-1)=0$

$\therefore D = -1, +1$.

$\therefore y_c = c_1e^{x} + c_2e^{-x}$.

Now, To find y_p:-

Let $y_p = \frac{1}{(D-1)(D+1)}(e^{-x}\sin e^{-x} + \cos e^{-x})$.

$= \frac{1}{(D-1)}\left[\frac{1}{(D+1)}(e^{-x}\sin e^{-x} + \cos e^{-x})\right]$

$= \frac{1}{(D-1)}\left[e^{-x}\int e^{x}(e^{-x}.\sin e^{-x} + \cos e^{-x})\right]$

$= \frac{1}{(D-1)}\left[e^{-x}\int e^{x}(\cos e^{-x} + e^{-x}.\sin e^{-x})\right]$

— $[\int e^{x}(f+f')dx = e^{x}f]$.

$= \frac{1}{(D-1)}.(e^{-x}.e^{x}.\cos e^{-x})$.

$= \frac{1}{(D-1)}.\cos e^{-x}$

$\therefore y_p = e^x \int e^{-x} \cdot \cos e^{-x}\, dx$.

Put $e^{-x} = t$.

$\therefore -e^{-x} \cdot dx = dt$.

$\therefore e^{-x}\, dx = -dt$.

$\therefore y_p = e^x \int -\cos t \cdot dt$.

$\therefore y_p = -e^x \cdot \sin t$.

Put $t = e^{-x}$.

$\therefore y_p = -e^x \cdot \sin e^{-x}$.

$\therefore$ General Solution is given by,

$y = y_c + y_p$

$\therefore y = c_1 e^x + c_2 e^{-x} + -e^x \cdot \sin e^{-x}$.

2. $(D^4 - 4D^3 + 6D^2 - 4D + 1)\, y = e^x + 2^x + \frac{1}{3}$.

$\rightarrow$ Let A.E. is,

$D^4 - 4D^3 + 6D^2 - 4D + 1 = 0$.

$\therefore D = 1$.

$\therefore$ 1	1	-4	6	-4	1
		1	-3	3	-1
	1	-3	3	-1	0

$\therefore (D-1)(D^3 - 3D^2 + 3D - 1)$

$\therefore$ 1	1	-3	3	-1
		1	-2	1
	1	-2	1	0

$\therefore (D-1)(D-1)(D^2-2D+1)$.

$\therefore (D-1)(D-1)(D-1)(D-1)$.

$\therefore D = 1, 1, 1, 1$.

$\therefore$ Roots are real and repeated.

$\therefore y_c = e^x (c_1x^3 + c_2x^2 + c_3x + c_4)$.

Now, To find y_p:-

$\therefore$ Let $y_p = \frac{1}{(D-1)^4} \cdot (e^x + 2^x + \frac{1}{3})$.

$= \frac{1}{(D-1)^4} e^x + \frac{1}{(D-1)^4} 2^x + \frac{1}{(D-1)^4} \cdot \frac{1}{3}$

$D \to 1 \ldots \quad D \to \log 2 \quad D \to 0$.

$= \frac{x^4}{4!} e^x + \frac{1}{(\log 2 - 1)^4} 2^x + \frac{1}{3}$.

$\therefore y_p = \frac{x^4}{24} \cdot e^x + \frac{1}{(\log 2 - 1)^4} 2^x + \frac{1}{3}$.

$\therefore y = y_c + y_p = e^x (c_1x^3 + c_2x^2 + c_3x + c_4) + \frac{x^4}{24} e^x + \frac{1}{(\log 2 - 1)^4} 2^x + \frac{1}{3}$

3. $(D^2 - 6D + 9)y = \frac{e^{3x}}{x^2}$. using (MOVP).

→ Let A.E. is,

$D^2 - 6D + 9 = 0$

$\therefore (D-3)(D-3) = 0$

$D = 3, 3$.

$\therefore y_c = e^{3x} (c_1x + c_2)$

$= x e^{3x} c_1 + e^{3x} c_2$.

$= c_1y_1 + c_2y_2$.

Here, $y_1 = x \cdot e^{3x} \quad y_2 = e^{3x}$

Now, $W = \begin{vmatrix} y_1 & y_2 \\ y_1' & y_2' \end{vmatrix} = \begin{vmatrix} x \cdot e^{3x} & e^{3x} \\ (3x+1)e^{3x} & 3e^{3x} \end{vmatrix}$

$= 3x \cdot e^{6x} - (3x+1)e^{6x}$

$= (3x - 3x - 1)e^{6x}$

$= -e^{6x}$.

Now, $u = \int \frac{-y_2 f(x)}{W} dx$

$= -\int \frac{e^{3x} \cdot e^{3x}}{-x^2 \cdot e^{6x}} dx$

$= \int x^{-2} dx$

$= \frac{-1}{x}$.

and $v = \int \frac{y_1 f(x)}{W} dx$.

$= \int \frac{x \cdot e^{3x} \cdot e^{3x}}{x^2(-e^{6x})} dx$

$= -\int \frac{1}{x} \cdot dx$.

$= -\log x$.

Now, Let P.I. $y_p = uy_1 + vy_2$.

$= \frac{-x \cdot e^{3x}}{x} + \left(-\frac{e^{3x}}{x}\right)$

$= \frac{-e^{3x}}{x} - \frac{e^{3x}}{x} \log x$.

$\therefore y_p = -\frac{2e^{3x}}{x} - e^{3x} \cdot \log x$.

$\therefore y_p = -e^{3x}\left(\frac{1}{x} + \log x\right)$.

∴ General solution is given by,

$$y = y_c + y_p$$
$$= (c_1 x + c_2) e^{3x} + e^{3x} (1 + \log x)$$

4. $$x^2 \frac{d^2y}{dx^2} - x \cdot \frac{dy}{dx} + 4y = \cos(\log x) + x \sin(\log x) \quad \text{— (I)}$$

→ Given equation is Cauchy's homogeneous linear differential equation. We use substitution $z = \log x$, $x = e^z$ & let $D = \frac{d}{dz}$.

and $$x \cdot \frac{dy}{dx} = Dy.$$

$$x^2 \cdot \frac{d^2y}{dx^2} = D(D-1)y.$$

where $D = \frac{d}{dz}$ — Put in (I) we get.

$$D(D-1)y - Dy + 4y = \cos z + e^z \cdot \sin z.$$
$$\therefore [D^2 - D - D + 4]y = \cos z + e^z \cdot \sin z.$$
$$\therefore (D^2 - 2D + 4)y = \cos z + e^z \cdot \sin z. \quad \text{— (II)}.$$

It is LDE with constant coefficient.

Let A.E. is,

$$D^2 - 2D + 4 = 0$$
$$\therefore D = \frac{2 \pm \sqrt{4 - 16}}{2}.$$
$$\therefore D = \frac{2 \pm \sqrt{-12}}{2}$$
$$\therefore D = \frac{2 \pm 2\sqrt{-3}}{2}$$
$$\therefore D = 1 \pm \sqrt{3}\, i$$

∴ Roots are imaginary & distinct.

$\therefore y_c = e^z (c_1 \cos\sqrt{3}z + c_2 \sin\sqrt{3}z)$.

Now, To find y_p :-

Let $y_p = \frac{1}{D^2-2D+4} (\cos z + e^z \cdot \sin z)$.

$= \frac{1}{D^2-2D+4} \cdot \cos z + \frac{1}{D^2-2D+4} \cdot e^z \cdot \sin z$.

$D^2 \to -1$. $\quad D \to (D+1)$.

$= \frac{1}{-1-2D+4} \cdot \cos z + e^z \frac{1}{(D+1)^2-2(D+1)+4} \cdot \sin z$

$= \frac{1}{3-2D} \cdot \cos z + e^z \cdot \frac{1}{D^2+3} \sin z$.

$= -\frac{2D+3}{4D^2-9} \cdot \cos z + e^z \cdot \frac{1}{-1+3} \cdot \sin z$.

$= -\frac{(2D+3)\cdot \cos z}{-4-9} + e^z \cdot \frac{1}{2} \cdot \sin z$.

$= \frac{1}{13} [-2\sin z + 3\cos z] + \frac{1}{2} e^z \cdot \sin z$.

$\therefore$ G.S. is given by,

$y = e^z [c_1 \cos\sqrt{3}z + c_2 \sin\sqrt{3}z] + \frac{1}{13} [3\cos z - 2\sin z$

$+ \frac{1}{2} e^z \cdot \sin z$.

$\therefore y =$ x [Put $e^z = x$ & $z = \log x$.

$\therefore y = x [c_1 \cos\sqrt{3}(\log x) + c_2 \sin\sqrt{3}(\log x)] + \frac{1}{13} [3\cos$

$- 2\sin(\log x)] + \frac{1}{2} x \cdot \sin(\log x)$.

5. $\frac{dx}{x^2(y-z)} = \frac{dy}{y^2(z-x)} = \frac{dz}{z^2(x-y)}$

→ choose $\frac{1}{x^2}, \frac{1}{y^2}, \frac{1}{z^2}$ as a set of multiplier

$\therefore \frac{\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{z^2}}{y-z+z-x+x-y}$

$= \frac{\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{z^2}}{0}$

$\therefore$ We set $\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{z^2} = 0$.

$\therefore$ By integrating, we get.

$\therefore \int \frac{1}{x^2} dx + \int \frac{1}{y^2} dy + \int \frac{1}{z^2} dz = c$

$\therefore \int x^{-2} dx + \int y^{-2} dy + \int z^{-2} dz = c$

$\therefore -x^{-1} - y^{-1} - z^{-1} = c$

$\therefore \frac{-1}{x} - \frac{1}{y} - \frac{1}{z} = c$

$\therefore \frac{1}{x} + \frac{1}{y} + \frac{1}{z} = -c.$

$\therefore \frac{1}{x} + \frac{1}{y} + \frac{1}{z} = c_1$ ——(I).

Now, choose $\frac{1}{x}, \frac{1}{y}, \frac{1}{z}$ is another set of multiplier.

$\therefore \frac{\frac{1}{x} + \frac{1}{y} + \frac{1}{z}}{x(y-z)+y(z-x)+z(x-y)}$

$\therefore \frac{\frac{1}{x} + \frac{1}{y} + \frac{1}{z}}{xy-xz+yz-xy+xz-xy}$

$\therefore \quad \frac{1/x + 1/y + 1/z}{0}$

$\therefore$ We set $\frac{1}{x} + \frac{1}{y} + \frac{1}{z} = 0$.

$\therefore$ By integrating we get,

$\therefore \int \frac{1}{x}\,dx + \int \frac{1}{y}\,dy + \int \frac{1}{z}\,dz = c.$

$\therefore \log x + \log y + \log z = \log c.$

$\therefore \log(xyz) = \log c.$

$\therefore xyz = c_2. \quad$ ——— (II)

$\therefore$ (I) & (II) together give the solution for given eq^n.

Q.2. Fill in the blanks with justification.

1. The solution of $\frac{d^3y}{dx^3} + y = 0$ is,

→ Let A.E. is,

$D^3 + 1 = 0.$

$\therefore \quad D = -1.$

$\therefore$

-1	1	0	0	1
		-1	1	-1
	1	-1	1	0

$\therefore (D+1)(D^2 - D + D).$

$\therefore D = -1, \qquad D = \frac{1 \pm \sqrt{1-4}}{2}$

$= \frac{1 \pm \sqrt{-3}}{2}$

$= \frac{1 \pm \sqrt{3}i}{2}$

$$\therefore y_c = c_1 e^{-x} + e^{1/2}\left(c_2 \cos\frac{\sqrt{3}}{2}x + c_3 \sin\frac{\sqrt{3}}{2}x\right)$$

2. The P.I. of differential equation $(D-2)^3 y = e^{2x} + 3^x$ is.

→ Let P.I. $= \frac{1}{(D-2)^3}(e^{2x} + 3^x)$.

$$= \frac{1}{(D-2)^3} e^{2x} + \frac{1}{(D-2)^3} 3^x$$

$$= \frac{x^3}{3!} e^{2x} + \frac{1}{(\log 3 - 2)^3} 3^x \qquad D \to \log 3.$$

$$\therefore P.I. = \frac{x^3}{6} e^{2x} + \frac{3^x}{(\log 3 - 2)^3}$$

3. The D.E. $(3x+2)^2 \frac{d^2y}{dx^2} + 3(3x+2)\frac{dy}{dx} - 36y = \frac{1}{3}[(3x-2)^2 - 1]$ — (I)

on putting $3x+2 = e^z$ & $D = \frac{d}{dz}$ is transformed into

→ Let $3x+2 = e^z$.

$\therefore z = \log(3x+2)$.

and $(3x+2)\frac{dy}{dx} = 3Dy$

$$(3x+2)^2 \frac{d^2y}{dx^2} = 9D(D-1)y$$

where $\theta = \frac{d}{dz}$ in (I) we get.

$9D(D-1)y + 9Dy - 36y = \frac{1}{3}[e^{2x} - 1]$.

$\therefore [9D^2 - 9D + 9D - 36]y = \frac{1}{3}[e^{2x} - 1]$.

$\therefore 9[D^2 - D + D - 4]y = \frac{1}{3}[e^{2x} - 1]$

$\therefore (D^2 - 4)y = \frac{1}{27}[e^{2x} - 1]$.

4. For simultaneous linear differential equation.

$\frac{dx}{dt} + 5x - 2y = t$.

$\frac{dy}{dt} + 2x + y = 0$. solution of x using $D = \frac{d}{dt}$ is obtained from.

→ Let $\frac{d}{dt} = D$.

$\therefore Dx + 5x - 2y = t$.

$\therefore (D+5)x - 2y = t$ ___ (I) . × (D+1)

$Dy + 2x + y = 0$

$\therefore (D+1)y + 2x = 0$ ___ (II) . × 2.

$\therefore$ Multiply (I) by (D+1) & (II) by 2 we get

$(D+1)(D+5)x - 2(D+1)y = t(D+1)$

$+ \quad 2(D+1)y + 4x = 0$

$(D+1)(D+5)x + 4x = t(D+1)$.

$\therefore [D^2 + 5D + D + 5]x + 4x = tD + t$.

$\therefore [D^2 + 6D + 5]x + 4x = tD + 1$.

$(D^2 + 6D)x + 9x = [2D^2 + 12D + 10]x = tD + 1$

$\therefore$ It is L.D.E. with constant x & t.

5. Considering first two ratio of the symmetrical simultaneous differential equation $\frac{dx}{y^2} = \frac{dy}{x^2} = \frac{dz}{x^2y^2z^2}$

One of the relation in the solution of D.E. is.

→ By choosing 1st & 2nd ratio,

i.e. $\frac{dx}{y^2} = \frac{dy}{x^2}$.

$\therefore x^2\,dx = y^2\,dy$.

$\therefore$ It is in V.S.F.

$\therefore$ Integrating both sides,

$\int x^2\,dx = \int y^2\,dy$.

$\therefore \frac{x^3}{3} = \frac{y^3}{3} + c$.

$\therefore x^3 - y^3 = 3c$.

$\therefore x^3 - y^3 = c_1$ ——— (I).

25/01/18.

Tutorial No. 6

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Complex Variables.

Q.1. Solve the following.

1. Show that $u = y^3 - 3x^2y$ is harmonic function. Find it's harmonic conjugate & corresponding analytic function $f(z)$ in terms of z.

→ Given:-

$$u = y^3 - 3x^2y.$$

By the equation of harmonic fun^n.

$$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0.$$

$$\therefore \text{L.H.S.} = \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} \quad \text{(I)}$$

But, $\frac{\partial u}{\partial x} = -6xy \quad \therefore \frac{\partial^2 u}{\partial x^2} = -6y$

and $\frac{\partial u}{\partial y} = 3y^2 - 3x^2 \quad \therefore \frac{\partial^2 u}{\partial y^2} = 6y.$

Put in (I).

$$\therefore \text{L.H.S.} = -6y + 6y$$
$$= 0$$
$$= \text{R.H.S.}$$
$$\therefore \frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0.$$

$\therefore u = y^3 - 3x^2y$ is harmonic function.

Now, To find analytic function in terms of z:-

Let $f(z) = u + iv \quad \text{(I)}$

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Diff. w.r.t x,

$\therefore f'(z) = u_x + iv_x$ — (II).

Given:-

$u = y^3 - 3x^2y$.

Diff. partialy w.r.t. x & y.

$\therefore \frac{\partial u}{\partial x} = u_x = 3 - 6xy$.

$\frac{\partial u}{\partial y} = u_y = 3y^2 - 3x^2$

By CR eqⁿ,

$v_x = -u_y$.

$\therefore v_x = 3x^2 - 3y^2$

Put in (I), we get,

$f'(z) = -6xy + i(3x^2 - 3y^2)$

Put $x = z$ & $y = 0$.

$\therefore f'(z) = 0 + i3z^2$.

$\therefore f'(z) = i3z^2$

By integrating both sides,

$\int f'(z)\,dz = i3\int z^2\,dz$.

$\therefore f(z) = iz^3 + C$ — (III).

Now, To find v :-

Put $z = x + iy$ & $c = c_1 + ic_2$ in (III).

$\therefore F(z) = u + iv = i(x+iy)^3 + c_1 + ic_2$

$= i(x^3 + 3x^2 iy - 3xy^2 - iy^3) + c_1 + ic_2$.

$= ix^3 - 3x^2y - 3xy^2 + y^3 + c_1 + ic_2$

$\therefore u + iv = (y^3 - 3x^2y + c_1) + i(x^3 - 3y^2x + c_2)$

$\therefore$ By comparing both sides, we get,

$u = y^3 - 3x^2y$ & $v = x^3 - 3xy^2$.

2. Use cauchy's integral formula to evaluate:
$\int_c \frac{2z^2 + z + 5}{(z - 3/2)^2} dz$ where c is $\frac{x^2}{4} + \frac{y^2}{9} = 1$.

→ For given fun^n,

$z = \frac{3}{2}$ is a singular point.

For a given ellipse $x^2/4 + y^2/9 = 1$,

$z = \frac{3}{2}$ lies inside the ellipse.

$\therefore$ By cauchy's integral formula,

$\int_c \frac{f(z)}{(z-a)^{n+1}} dz = \frac{2\pi i}{n!} f^n(a)$ ... (I).

Here, $F(z) = 2z^2 + z + 5$,

$n = 1$ & $a = \frac{3}{2}$.

$\therefore F'(z) = 4z + 1$.

$\therefore f'(a) = f'\left(\frac{3}{2}\right) = 4 \times \frac{3}{2} + 1$

$= 2 \times 3 + 1 = 6 + 1$

$= 7$

Put in (I).

$\therefore \int_C \frac{2z^2 + z + 5}{(z - 3/5)^2} dz = \frac{2\pi i}{1!} \cdot 7.$

$= 14\pi i.$

3. $\int_C \frac{z^2 + \cos^2 z}{(z - \pi/4)^3} dz$, where c is a circle $x^2 + y^2 = 1$.

→ Here, $z = \frac{\pi}{4} = 0.7$ is a singular point.

lies inside the circle $x^2 + y^2 = 1$.

$\therefore$ By cauchy's integral formula,

$\int_C \frac{f(z)}{(z-a)^{n+1}} dz = \frac{2\pi i}{n!} f^n(a) \quad \text{---(I)}.$

Here, $f(z) = z^2 + \cos^2 z$

$n = 2 \quad \& \quad a = \frac{\pi}{4}$

$\therefore f'(z) = 2z - 2\cos z \cdot \sin z$

$= 2z - \sin 2z.$

$\therefore f''(z) = 2 - 2\cos 2z.$

$\therefore f''(a) = f''\left(\frac{\pi}{4}\right) = 2 - 2 \cdot \cos 2\left(\frac{\pi}{4}\right) = 2 - 2 \cdot \cos\frac{\pi}{2}$

$= 2.$

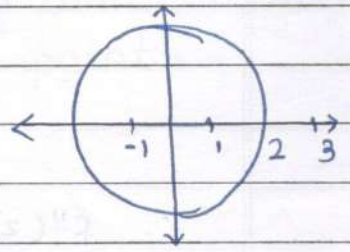
Put in (I).

$$\therefore \int_C \frac{z^2 + \cos^2 z}{(z-\pi/4)^3}\, dz = \frac{2\pi i}{2!} \times 2.$$

$$= 2\pi i.$$

4. Evaluate using residue theorem $\int_C \frac{2z^2+2z+1}{(z+1)^3(z-3)}\, dz$ where C is contour $|z+1| = 2$.

→ Let,



$f(z) = \frac{2z^2+2z+1}{(z+1)^3(z-3)}$ has simple poles at $z = -1, z = 3$ among this poles $z = -1$ lies inside the circle $|z+1| = 2$.

$\therefore$ By residue theorem,

$$\int_C f(z)\, dz = 2\pi i\, [r_1 + r_2 + \dots + r_n] \quad \text{--- (I)}.$$

Now, To find residue:-

at $z = -1$, here, $n = 3$,

$$\therefore \text{Res}(a) = \frac{1}{(n-1)!} \left[\frac{d^{n-1}}{dz^{n-1}} (z-a)^n f(z) \right]_{z=a}$$

$$\therefore \text{Res}(-1) = \frac{1}{(3-1)!} \left[\frac{d^2}{dz^2} \left[(z+1)^3 \cdot \frac{2z^2+2z+1}{(z+1)^3 \cdot (z-3)} \right] \right]_{z=-1}.$$

$$= \frac{1}{2!} \cdot \left[\frac{d^2}{dz^2} \cdot \frac{2z^2+2z+1}{(z-3)} \right]_{z=-1}.$$

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But, $f(z) = \frac{2z^2+2z+1}{(z-3)}$

$\therefore f'(z) = \frac{(z-3)(4z+2)-(2z^2+2z+1)\cdot 1}{(z-3)^2}$

$= \frac{4z^2+2z-12z-6-2z^2-2z-1}{(z-3)^2}$

$= \frac{2z^2-12z-7}{(z-3)^2}$

$\therefore f''(z) = \frac{(z-3)^2(4z-12)-(2z^2-12z-7)(z-3).2}{(z-3)^4}$

$= \frac{(z-3)[(z-3)(4z-12)-2.(2z^2-12z-7)]}{(z-3)^4}$

$= \frac{4z^2-24z+36-4z^2+24z+14}{(z-3)^3}$

$= \frac{50}{(z-3)^3}$.

$\therefore \text{Res}(-1) = \frac{1}{2!}\left[\frac{50}{(z-3)^3}\right]_{z=-1}$.

$= \frac{1}{2} \times \frac{50}{(-1-3)^3}$

$= \frac{25}{(-4)^3}$

$\therefore \text{Res}(-1) = \frac{-25}{64}$.

At, $z_3 = 3$; $w_3 = 3i$

$\therefore 3i = \frac{a+b}{c+d}$

$\therefore 3ci + 3di = a + b.$

But from (II) & (III).

$3ci + 3di = a + a$

$= 2a.$

$\therefore 3ci + 3di = 2ic$

$\therefore 3di = 2ic - 3ic$

$\therefore 3di = -ic$

$\therefore 3d = -c$

$\therefore d = -\frac{c}{3}.$

Put in (I).

$\therefore w = \frac{ic + icz}{c - cz/3}$

$= \frac{i + iz}{1 - z/3} = \frac{i(1+z)}{3 - z/3}$

$\therefore w = \frac{i(3+3z)}{3-z}$

Q.6. Find the map of the circle $|z - i| = 1$ under the transformation $w = 1/z$ into w plane.

→ Let, $w = \frac{1}{z}$

$\therefore z = \frac{1}{w}$

Put $z = x + iy$. $w = u + iv$.

$\therefore x + iy = \frac{1}{u + iv}$

$$\therefore x+iy = \frac{1}{u+iv} \times \frac{u-iv}{u-iv}$$

$$= \frac{u-iv}{u^2+v^2}$$

$$\therefore x+iy = \frac{u}{u^2+v^2} + i\left(\frac{-v}{u^2+v^2}\right)$$

By comparing both sides,

$$x = \frac{u}{u^2+v^2} \quad \& \quad y = \frac{-v}{u^2+v^2}$$

consider circle $|z-i| = 1$

Put $z = x+iy$,

$$\therefore |x+iy-i| = 1$$

$$\therefore |x+i(y-1)| = 1$$

$$\therefore \sqrt{x^2+(y-1)^2} = 1.$$

$$\therefore x^2+(y-1)^2 = 1.$$

$$\therefore \left[\frac{u}{u^2+v^2}\right]^2 + \left[\frac{-v}{u^2+v^2} - 1\right]^2 = 1.$$

$$\therefore \frac{u^2}{(u^2+v^2)^2} + \frac{v^2}{(u^2+v^2)^2} + \frac{2v}{u^2+v^2} + 1 = 1$$

$$\therefore \frac{u^2+v^2}{(u^2+v^2)^2} + \frac{2v}{u^2+v^2} = 0.$$

$$\therefore \frac{1}{u^2+v^2} + \frac{2v}{u^2+v^2} = 0$$

$$\therefore \frac{1}{u^2+v^2} = \frac{-2v}{u^2+v^2}$$

$$\therefore 1 = -2v$$

$$\therefore v = \frac{-1}{2}.$$

Thus, the circle $|z-i| = 1$ in z-plane maps to a straight line $v = -\frac{1}{2}$ in w-plane under the transformation $w = 1/z$.

Q.7. Show that transformation $w = \sin z$ transformations the straight line $x = c$ of z plane into hyperbola in the w plane.

→ Let,

$$w = \sin z$$

Put, $w = u+iv$ & $z = x+iy$.

$$\therefore u+iv = \sin(x+iy).$$

$\therefore u+iv = \sin x \cdot \cos iy + \cos x \cdot \sin iy$.

But $\cos iy = \cosh y$
& $\sin iy = i\sinh y$.

$\therefore u+iv = \sin x \cdot \cosh y + i\cos x \cdot \sinh y$

$\therefore$ By comparing both sides,

$u = \sin x \cdot \cosh y$ & $v = \cos x \cdot \sinh y$.

$\therefore \cosh y = \frac{u}{\sin x}$ $\therefore \sinh y = \frac{v}{\cos x}$.

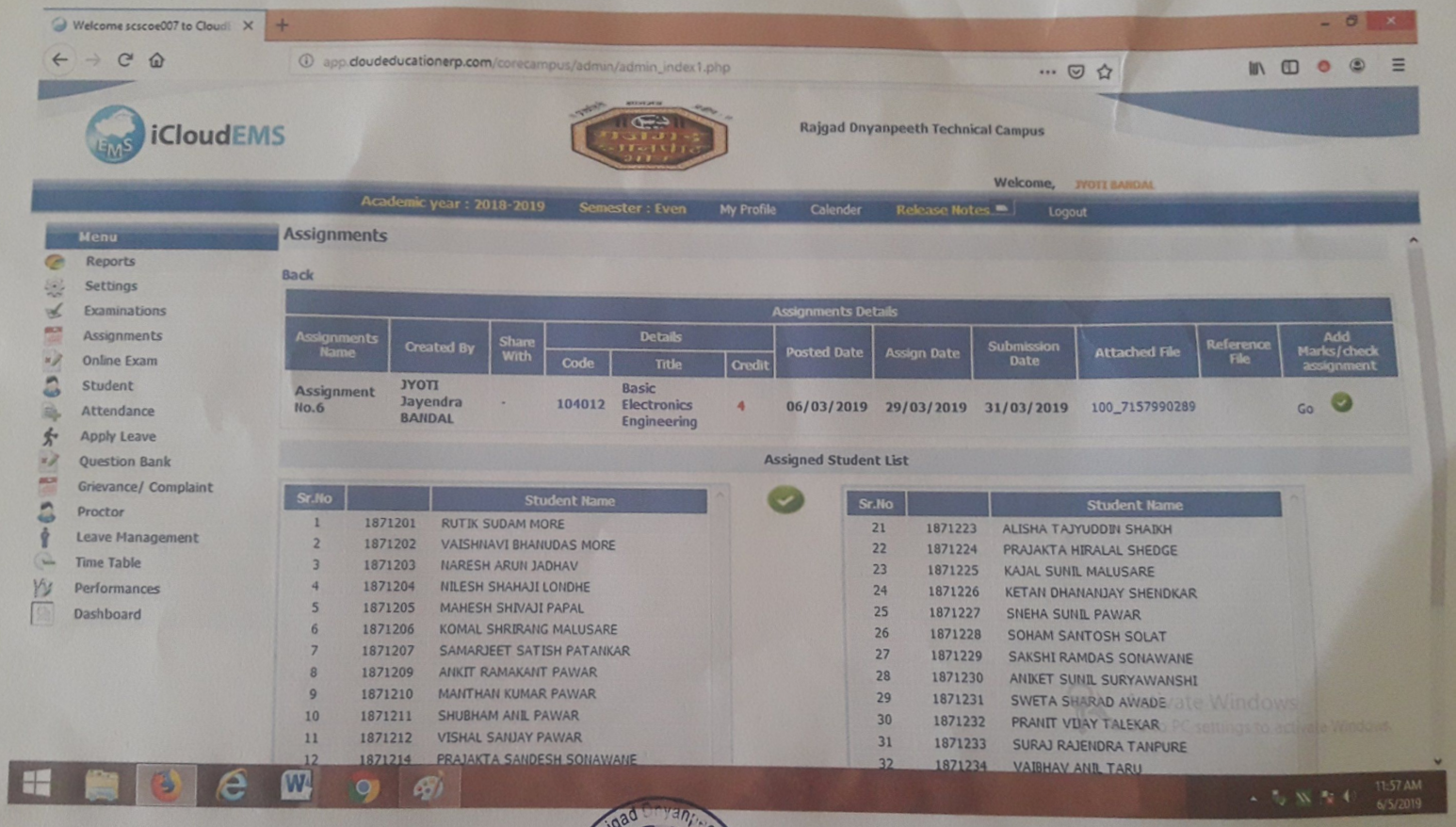
$\therefore \cos^2 hy - \sin^2 hy = 1$.

$\therefore \frac{u^2}{\sin^2 x} - \frac{v^2}{\cos^2 x} = 1$.

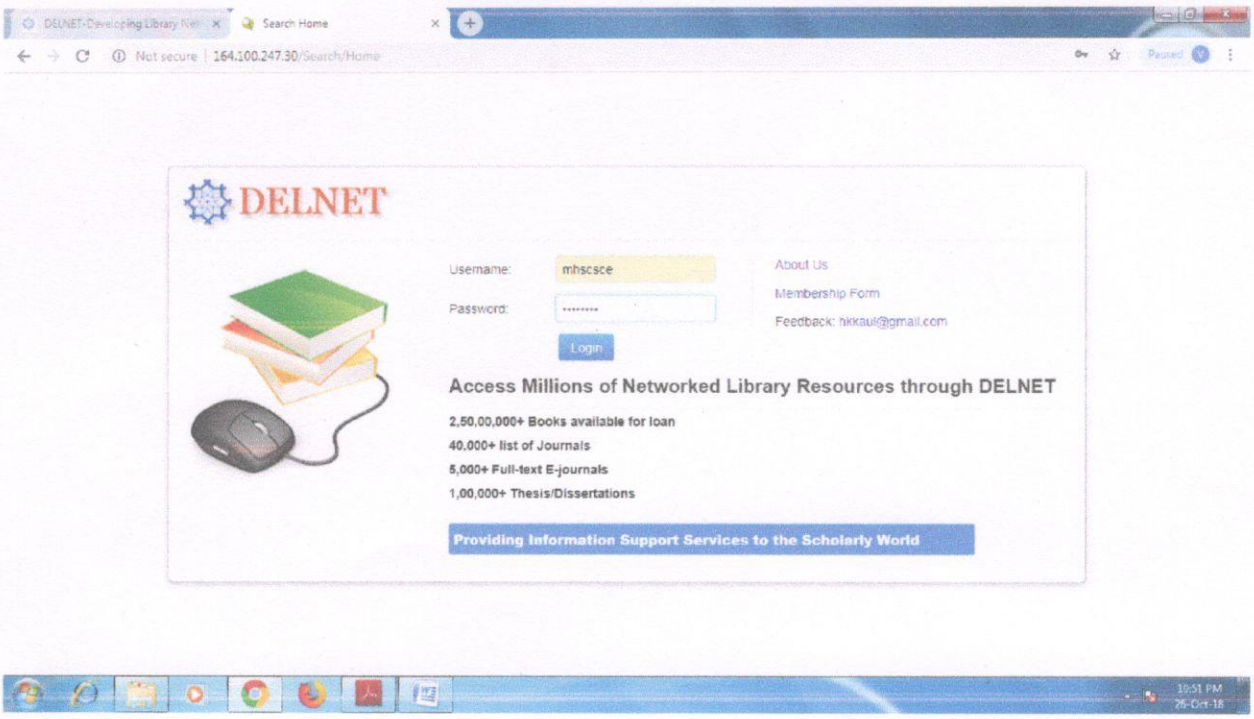
$\therefore$ Thus, $x = c$. of zplane is the transformation into hybola in the w plane is proved.

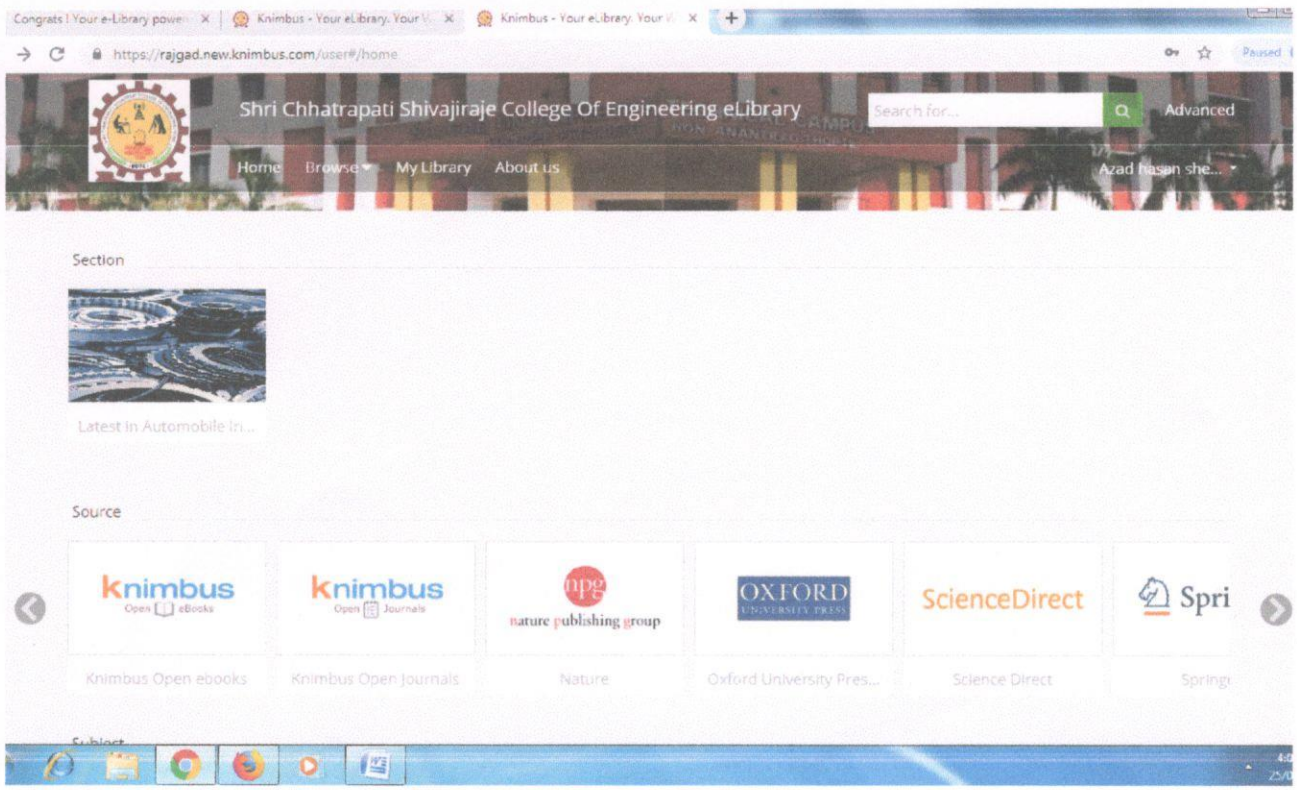
09/04/18.

ERP Utilization Sample for F.E Students



Library Resources Nmaely DELNET,Knimbus Etc..





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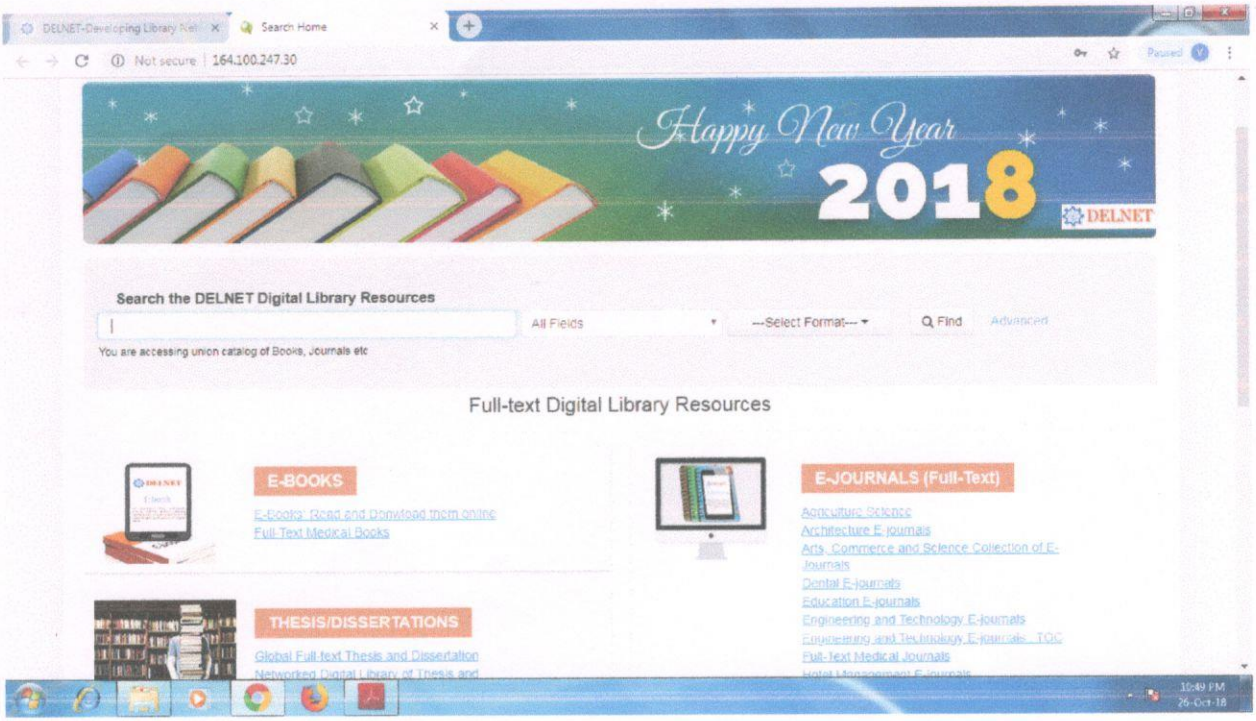

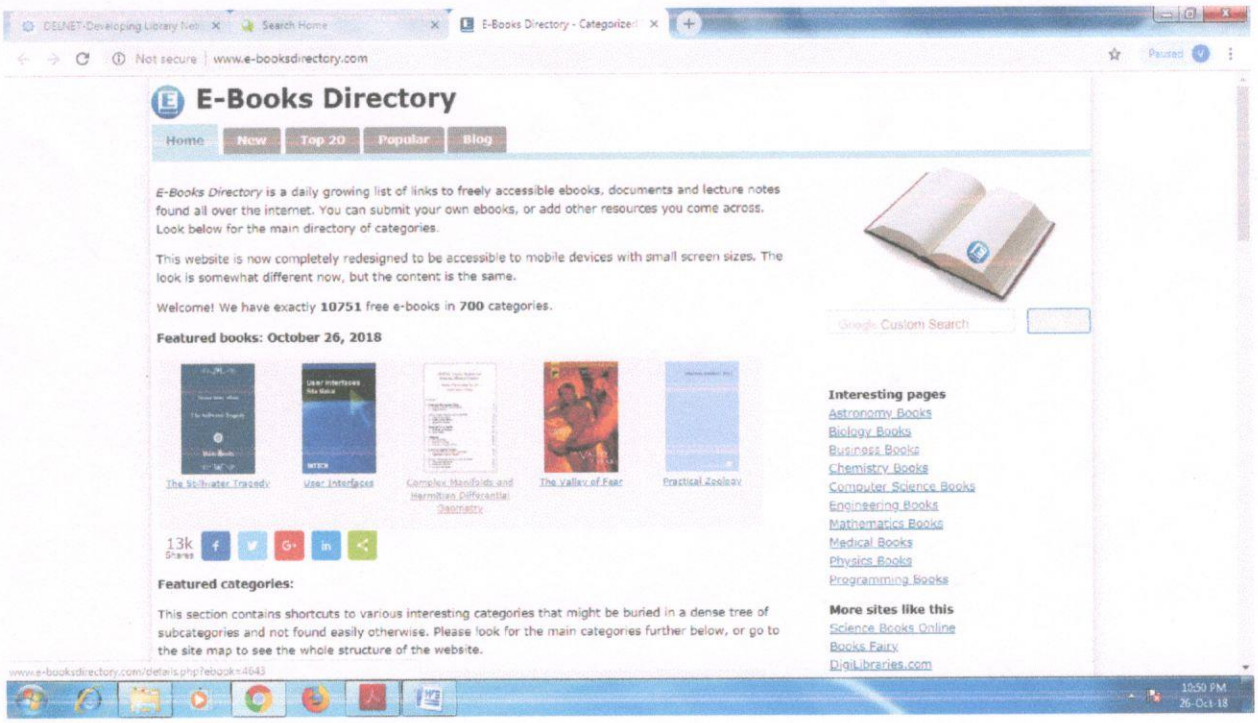

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SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

Guest Lecture Sample of Civil Department Date: 19/01/2018

NOTICE

All students of SE, TE & BE Civil hereby informed that we are going to conduct an expert talk on **"Lean Maestro- Improving industry oriented perception"** in our department at Class Room. All students has mandatory to attend this lecture.

H. O. D.

Prof. G. S. Jadhav
Head of Department
Dept. of Civil Engineering
Shri Chh. Shivajiraje College of Engg,
Dhangawadi, Pune-412206

Shri Chhatrapati Shivajiraje College of Engineering, Pune
Civil Engg. Dept.
RD

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

Dept: Civil Engineering **Academic Year:** 2017-18

REPORT OF GUEST LECTURE

Class : SE, TE & BE students **Date** : 23/01/2018 **Duration of Session** : 2 Hrs

Title/Topic : Lean Maestro- Improving industry oriented perception.

Name of Expert : Mr. Anand Joshi

From : Lean maestro - Training & Research institute

Co-Ordinator : Prof. S. R. Sutar

Objective : To create an awareness of "lean" in student to increase perception about profession.

Description : The guest Mr. Anand Joshi explains the new emerging concept i.e "lean" which plays the key role in education industry to correlate the educational knowledge with industry. Lean & their parameters help to student to change their perception about industry. The lecture helps to create awareness in student about industry oriented education through "lean" due to which student enter into industry/market with set of skills.

Conclusion : Students are very well understood that; it is very much important to have industry oriented skill sets.

Session Photo:

Facultymember

Shri Chhatrapati Shivajiraje College of Engineering Civil Engg. Dept. Pune

HOD

Head of Department

Dept. of Civil Engineering

Shri Chh. Shivajiraje College of Engg.

Dhangawadi, Pune-412206

॥ प्रज्वलितो ज्ञानमयः प्रदिपः ॥
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Dr. Bhagyashree s. Patil
Hon. secretary
Anantrao Thopte
Founder President
Ex. Education Minister
Maharashtra State

Ref. No. RDTC/SCSCOE/CIVIL DEPT/2017-18/ Date: 23/01/2018

CONDUCTION

To,

Mr. Anand Joshi

Lean maestro

Training & Research institute

Pune.

Subject: Expression of gratitude

Dear Sir,

On behalf of Institute, It gives me an immense pleasure to thank you for sparing your valuable time with us and sharing your experiences. We express our immense gratitude for having you at our college to conduct a fabulous session on "Lean Maestro- Improving industry oriented perception" dated on 23/01/2018. It was our pleasure for having a person like you at our institute. We take this opportunity to tell you this with pride that our student thoroughly enjoyed your entire session. We would like to know if you ever need our support.

We look forward for your expertise in future educational endeavors

Thanking you.

Received
Ajodi
23/1/18

Yours Sincerely,

Prof. G. S. Jadhav

H.O.D of Civil Engg.
Head of Department
Dept. of Civil Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Gat No. 237, Pune Bangalore High-way, Dhangawadi, Tal. Bhor, Dist. - Pune. Pincode - 412206. Telefax. : 02113-282456 / 556 / 656
Email : scscoe@gmail.com Website : www.scshivajirajecoe.com

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Anantrao Thopte
Founder President
Ex. Education Minister
Maharashtra State

Ref. No. RDTC/SCSCOE/CIVIL DEPT/2017-18/ Date: 17/01/2018

INVITATION

To,

Mr. Anand Joshi

Lean maestro

Training & Research institute

Pune.

Subject: Invitation for conducting an expert talk on Lean Maestro- Improving industry oriented perception.

Respected sir,

This gives Department of Civil Engineering of SCSCOE, great pleasure to request you to expert lecture on Lean Maestro- Improving industry oriented perception for SE, TE, BE of Civil engineering students in SCSCOE, Dhangawadi. We will be thankful to you if you can schedule this programme on 23/01/2018.

Therefore we request you to kindly send your resume. We are looking forward to meet you soon and get enlightened with your experience.

Thanking you.

Received
Ajoshi
17/1/18

Yours Faithfully,

Prof. G. S. Jadhav
Head of Department
H.O.D of Civil Engg.
Dept. of Civil Engg.
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Tal. Bhor, Dist. Pune

Shri Chhatrapati Shivajiraje College of Engineering Civil Engg Dept. Pune

Gat No. 237, Pune Bangalore High-way, Dhangawadi, Tal. Bhor, Dist. - Pune. Pincode - 412206. Telefax. : 02113-282456 / 556 / 656
Email : scscoe@gmail.com Website : www.scshivajirajecoe.com

Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engineering
Dhangwadi, Tal: Bhor, Dist: Pune, 412206

"Expert talk on Lean Maestro- Improving industry oriented perception" Date – 23/01/18

Student Attendance Sheet

Roll No	Name of the Student	Sign	Roll No	Name of the Student	Sign
1721001	Darekar Mohak Ajit		1721033	Dhaygude Amol S.	
1721002	Pawar Ganesh Vitthal		1721034	Padalkar Akshay D.	
1721003	Bathe Nikhil Navnath		1721035	Mandhare Akshay M.	
1721004	Gade Akshay Navnath		1721036	Lawate Dipak Y.	
1721005	Jedhe Akash Prakash		1721037	Sheth Syuash Sameer	
1721006	Pansare Tejas C.		1721038	Shinde Akash Dhanraj	
1721007	Sonawane Pratiksha .		1721039	Pisal Akash Nanaso	
1721008	Pawar Ankit Sharad		1721040	Jadhav Shubham Balasaheb	
1721009	Shedge Maruti Dagadu		1721041	Konde Nikhil S.	
1721010	Kadam Satyam Suresh		1721042	Khengare Akshay M.	
1721011	Gaikwad Shubham V.		1721043	Vilegave Amar G.	
1721012	Thombare Dhanashri .		1721044	Suryawanshi Shubham.	
1721013	Shinde Shubham N.		1721045	Khandalkar Avinash	
1721014	Pawar Amit Shankar		1721046	Jadhav Ajay Balu	
1721015	Patil Akshay Arvind		1721047	Kale Hrushikesh S.	
1721016	Kumbhar Suyog Vishnu		1721048	Pawar Sanket Yuvraj	
1721017	Patil Manoj Sudam		1721049	Dhumal Akshay R.	
1721018	Tekawade Ajay S.		1721050	Pisal Shubham B.	
1721019	Kadam Omkar R.		1721051	Suryawanshi Suraj A.	
1721020	Khopade Pranali A.		1721052	Kale Shivaji Balasaheb	
1721021	Pawar Neha Bhaudas		1721053	Jagtap Ajinkya Goraknath	
1721022	Chavan Chetan B.		1721054	Salunkhe Sagar Pralhad	
1721023	Pawar Nikita Sayaji		1721055	Londhe Akash Kushaba	
1721024	Zanje Laxman Kaluram		1721056	Davare Shrikant Tanaji	
1721025	Mohite Vinayak K.		1721057	Jadhav Sagar Balaso	
1721026	Deshmukh Vishal G.		1721058	Kalel Madhuri Dattu	
1721027	Kadam Tanaji Tukaram		1721059	Veer Rushabh Narayan	
1721028	Katkar Shubham Suhas		1721060	Surwase Krushna Vitthal	
1721029	Barbhai Swapnil M.		1721061	Badadhe Samir Gokul	
1721030	Ghulam Hussain		1721062	Kate Nikhil Vijay	
1721031	Gole Prathamesh B.		1721063	Pawar Shankar Pandit	
1721032	Dhaygude Dnyaneshwar.		1721064	Kindre Rajendra Shankar	

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Civil Engg. Dept.

Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engineering
Dhangwadi, Tal: Bhor, Dist: Pune, 412206

"Expert talk on Lean Maestro- Improving industry oriented perception"

Date – 23/1/18

Student Attendance Sheet

Roll No	Name of the Student	Sign	Roll No	Name of the Student	Sign
1731001	TAKAWALE RUSHIKESH ANIL		1731031	DHASDE SWAPNIL CH.	
1731002	BAGAL AKASH DILIP		1731032	TALEKAR AKSHAY VISHNU	
1731003	CHOPADE SUPRIYA PRITAM		1731033	BANEKAR NADIM SHAUKAT	
1731004	CHAUDHARI NITIN R		1731034	ARDE SAGAR SHAMRAO	
1731005	SATALKAR SUNIL SUDHAKAR		1731035	TARU AKSHAY RAJENDRA	
1731006	THORAT JAGDISH UMESH		1731036	KARANJE AMIT BALASAHEB	
1731007	SHETE TEJASWINI RAMESH		1731037	ZENDE TEJAS TANAJI	
1731008	CHAVAN CHITANYA S		1731038	KUMBHARKAR PRASHANT R.	
1731009	DESHMUKH KIRAN VILAS		1731039	MOHITE SHIVDAS P	
1731010	JAGTAP DIPTI C		1731040	SAIYED FARAZ ALIMUDDIN	
1731011	BHOSALE RAJESH SHIVAJI		1731041	SHIRKE PRASHANT SAMPAT	
1731012	KUMBHAR SHAHSANK S		1731042	SHIRASKAR SAMEER T.	
1731013	YADAV SHUBHAM VILAS		1731043	SONDKAR SHEKHAR S.	
1731014	MAHAMULKAR RAHUL R.		1731044	TALEKAR ANIKET DH.	
1731015	DHAMAL NIKHIL GORAKH		1731045	PATIL PRAVIN VASANT	
1731016	TARANGE GANESH T		1731046	PANALE ASHWINI GANPAT	
1731017	SABLE SUYOG SHANKAR		1731047	KURADE AKSHAYKUMAR S.	
1731018	KHOMANE AKSHAY D		1731048	PATIL ROHIT GUNGRAO	
1731019	BARASKAR DEVENDRA G.		1731049	RATHOD CHANDRAKANT D.	
1731020	RAWALEKAR POOJA PRAVIN		1731050	SUTAR KOMAL JALINDAR	
1731021	JAVALE DIPAK POPAT		1731051	YADAV ROHIT ASHOK	
1731022	JAGTAP PRATHAMESH M		1731052	KHATAVKAR NAVNATH D.	
1731023	MORE SHREYASH GANESH		1731053	GORE AKASH RAJENDRA	
1731024	AMBOLE NIKHIL MADHUKAR		1731054	GAIKWAD ABHIJIT LALASO	
1731025	KAULGE AJIT MOHAN		1731055	CHAVAN AJINKYA VIJAY	
1731026	BORANA VINOD K		1731056	AHIR AJIT RAJARAM	
1731027	CHAVAN PRATIK BHAGWAN		1731057	HANKARE RUSHIKESH V.	
1731028	KUMBHARKAR RAJENDRA R.		1731058	BALTE JEEVAN PANDURANG	
1731029	GAUDGAO ASHPAK DAUD		1731059	DHAYGUDE ANIKET V	
1731030	DHUMAL MAYUR DHANAJI		1731060	MANE AMOL DATTATRAY	

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Civil Engg. Deptt.

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SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

"Expert talk on Lean Maestro- Improving industry oriented perception"

Student Feedback Form

Students are required to rate the course on the following attributes using the 4 -point scale shown.

Course: [tick (✓) in the relevant cell]

Parameters	A Very Good	B Good	C Satisfactory	D Unsatisfactory
1. Overall rating of the course content	✓			
2. Course objectives were clear		✓		
3. Clarity and relevance of textual reading material			✓	
4. The teacher was effective in communicating the content of the course	✓			
5. The teacher responded to questions in an informative, appropriate and satisfactory manner.			✓	
6. Do you have any suggestions for future workshops that you would like us to organize?	—			
7. Would you recommend this course to other students?	Yes			
Any Other Comments- Session was very good.				

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

Quiz Competition Sample Mechanical Department **Date:** 29/01/2018

NOTICE

All the students of S.E. Mechanical are here by informed that we are going to arrange ***'Quiz Competition'***. All the students are advised to participate enthusiastically. Details are as follows-

Date: 31/01/2018

Time: 01.30 pm – 04.30 pm

Venue: RAC Lab

Prof. R.S. Lavate
Coordinator

Prof. S.K. Pawar
H.O.D.

Head of Department
Dept. of Mechanical Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

REPORT OF DEPARTMENTAL ACTIVITY

DEPARTMENT: Mechanical Engineering CLASS: SE

TITLE OF SESSION: Quiz Competition

DAY & DATE: Tuesday 30/01/2018 DURATION OF SESSION: 01:30 pm to 04:30 pm

STUDENTS PRESENT: 80

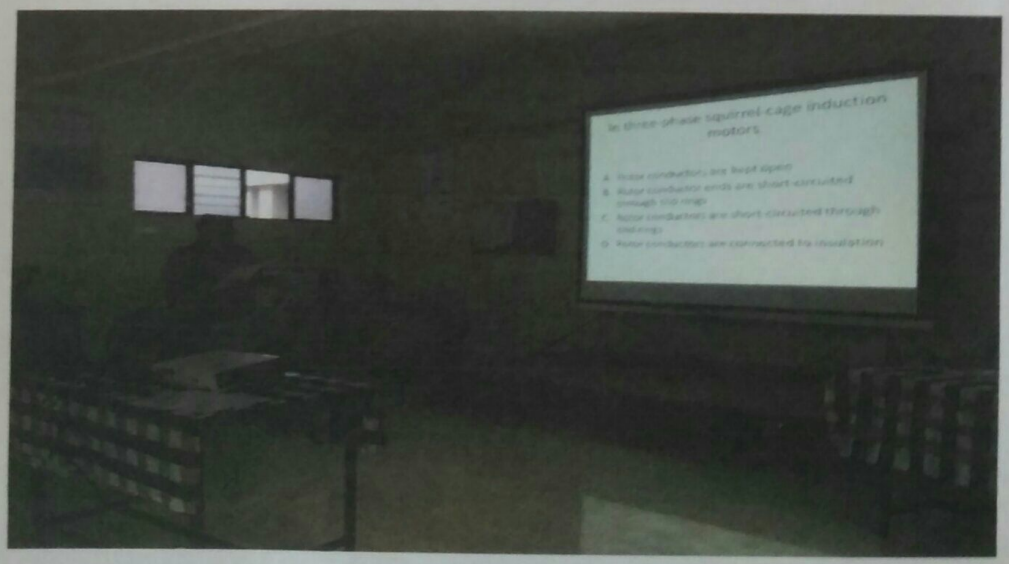
CORDINATOR: Prof. R. S. Lavate

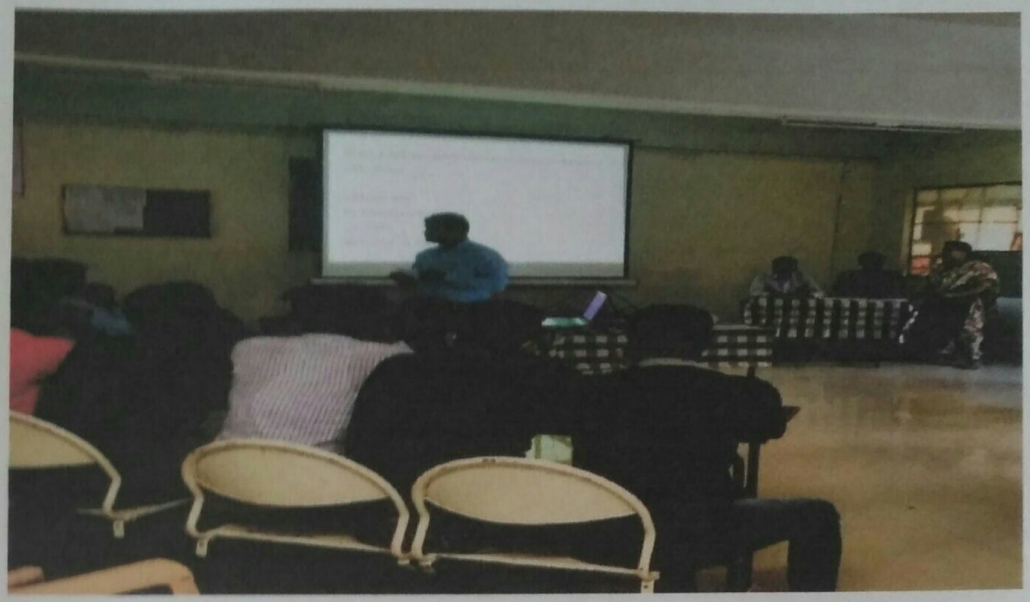
OBJECTIVE: To make awareness among the students about objective questions

DISCRIPTION: Today we arranged quiz competition. This competition is based on the technical subject that is Fluid mechanics. This subject is part of syllabus of second year mechanical Engineering of Savitribai Phule Pune University. The question asked in this competition is from same syllabus. The online exam for this student is from 5th Feb, so this competition is also help them to get answer which may asked in online exam. The 20 groups are participated for this competition and for each group around 7 questions are asked, means 140 questions are covered in this competition.

CONCLUSION: Due to these competition students get prepare for online exam Phase - I and also they get awareness about how the objective questions are asked in exam.

PHOTO'S DURING SESSION:





Prof. R. S. Lavate
Coordinator

Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engg.
DTE:6324
SPPU:4071
Dhangawadi
Pune
412206

Prof. S. K. Pawar
HOD

Head of Department
Dept. of Mechanical Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Rajgad Dnyanpeeth's

RAJGAD DNYANPEETH TECHNICAL CAMPUS

(Shri Chh. Shivajiraje College of Engineering)

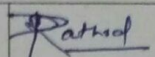
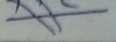
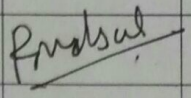
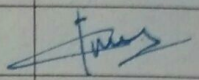
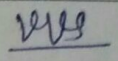
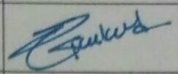
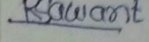
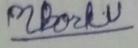
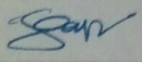
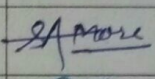
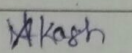
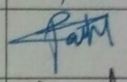
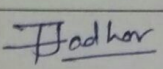
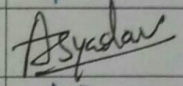
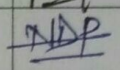
S. No. 237, Dhangawadi, Tal- Bhor, Dist-Pune 06

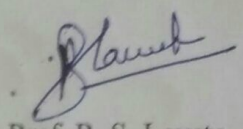
Attendance Report of Quiz Competition

Class: SE Mech (A) **Academic Year: 2017-18** **Date:31/01/2018**

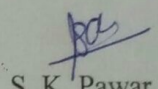
Roll No.	Name of Student	Sign	Roll No.	Name of Student	Sign
1742001	Temghare Rushikesh Ganesh		1742031	Salunkhe Suraj Mahadev	
1742002	Maharnawar Bhagyesh Kondiba		1742032	Salunkhe Viraj Nanaso	
1742003	Jagtap Uddesh Tanaji		1742033	Sankpal Shardul Mukund	
1742004	Parkhande Akshay Sunil		1742034	Khamkar Jitendra Rajendra	
1742005	Kazi Abdulgafur Abdulhamid		1742035	Jagtap Kiran Shivaji	
1742006	Bhoi Sumit Tanaji		1742036	Shaikh Azim Abdulraheman	
1742007	Gavhane Shubhashri Rajendra		1742037	Vandekar Ruturaj Dinkar	
1742008	Narkhede Dipak Gajanan		1742038	Jadhav Tejas Madan	
1742009	Bhosale Prashant Pradip		1742039	Sangatti Shoail Yusuf	
1742010	Nigade Sushant Sharad		1742040	Kamble Pranav Ganpat	
1742011	Deshmukh Prasad Kailas		1742041	Gaikwad Akash Arvind	
1742012	Soudenkar Suryakant Kishan		1742042	Khot Mayuresh Dipak	
1742013	Jadhav Nikhil Pandurang		1742043	Shedge Mayur Shivaji	
1742014	Dhanavale Sumit Vitthal		1742044	Raut Vijay Rajendra	
1742015	Kadam Akash Ravindra		1742045	Raut Sunil Balkrushna	
1742016	Yadav Onkar Sanjay		1742046	Bandal Vikram Sudam	
1742017	Shaikh Salim Sikandar		1742047	Nikam Pramod Hindurao	
1742018	Taru Anuj Sadanand		1742048	Patil Shaleevan Nitin	
1742019	Kardile Pavan Vijay		1742049	Yadav Vishal Laxman	
1742020	Jaiswara Rushikesh Shivsagar		1742050	More Tirth Uttam	

Shri Chhatrapati Shivajiraje College of Engineering, Pune
Mech. Engg. Dept.

1742021	Rathod Parashram Narayan		1742051	Walhekar Suraj Govind	
1742022	Pal Prerna Somnath		1742052	Khandale Kumar Chandrakant	
1742023	Adsul Rajesh Mahesh		1742053	Khan Anwar Asif	
1742024	Sanas Ritesh Bharat		1742054	Salunkhe Vinod Vilas	
1742025	Gaikwad Pragati Baban		1742055	Sawant Rushikesh Lahu	
1742026	Borkar Mayur Vijay		1742056	Tupe Sagar Sanjay	
1742027	Jadhav Prajakta Rajendra		1742057	More Sushant Avinash	
1742028	Nikam Akash Sanjay		1742058	Mohite Rahul Appaso	
1742029	Jadhav Tejas Shailesh		1742059	Yadav Amar Sunil	
1742030	Salunkhe Akshay Ramchandra		1742060	Pukale Nanaso Dadaso	



Prof. R. S. Lavate
Coordinator



Prof. S. K. Pawar
H.O.D

HOD
Mechanical Engineering Dept
Siri Chhatrapati Shivajiraje
College of Engineering
Dhangawadi Tal. Bhor
Dist. Pune - 412206

Rajgad Dnyanpeeth's

RAJGAD DNYANPEETH TECHNICAL CAMPUS

(Shri Chh. Shivajiraje College of Engineering)

S. No. 237, Dhangawadi, Tal- Bhor, Dist-Pune 06

Attendance Report of Quiz Competition

Class: SE Mech (B) **Academic Year: 2017-18** **Date:31/01/2018**

Roll No.	Name of Student	Sign	Roll No.	Name of Student	Sign
1742061	Jadhav Hrishikesh Suresh		1742089	Chormale Shubham Gangaram	
1742062	Dasake Yuvraj Govind		1742090	Kochale Samadhan Shamrao	
1742063	Walhekar Jayantkumar S.		1742091	Shinde Abhishek Laxman	
1742064	Sonmali Rahul Tukaram		1742092	Sonawane Mayur Popat	
1742065	Mhaske Akash Ashok		1742093	Shinde Sumit Subhedar	
1742066	Sankpal Pravin Yashwant		1742094	Bhosale Krishna Adinath	
1742067	Nimbale Basavraj Nagnath		1742095	Walhe Nilesh Ganapat	
1742068	Badak Pratik Deepak		1742096	Kinhale Swagat Mohan	
1742069	Deshmukh Rushikesh		1742097	Bhandari Nehali	
1742070	Kadam Ganesh Gorakhnath		1742098	Randhave Rahul Sarjerao	
1742071	Modak Ketan Roshan		1742099	Pawar Rushikesh Balaso	
1742072	Hadake Swapnil Nandkumar		1742100	Attar Mustfa Faruk	
1742073	Vidhate Ashitosh Tukaram		1742101	Shete Pranit Pradip	
1742074	Kanteliya Nikunj Ravi		1742102	Palange Aditya Aavinash	
1742075	Shinde Sachin Pandurang		1742103	Khade Ashish Mahadev	
1742076	Bhosale Shubham Milind		1742104	Dhumal Shubham Shrikant	
1742077	Tikone Nikhil Nagesh		1742105	Sinkar Kunal Gopinath	
1742078	Dhavale Vaibhav Jayvant		1742106	Pandagale Sanket Vilas	
1742079	Khot Jeevan Shashikant		1742107	Salunkhe Akash Vasant	
1742080	Kank Nilesh Yashwant		1742108	Waghmale Akshay Ashok	
1742081	Mane Avinash Prakash		1742109	Mane Sanket Rajendra	
1742082	Sawant Vaibhav B.		1742110	Mane Sagar Balu	
1742083	Jangam Swarup Rajaram		1742111	Patil Suhas Baban	
1742084	Rajmane Shubham Sunil		1742112	Korade Abhijit Prabhakar	
1742085	Awati Yogesh Anil		1742113	Bhosale Ajinkya Sanjay	
1742086	Jadhav Viraj Dhanaji		1742114	Tanpure Shubham C.	
1742087	Ambike Mangesh K.		1742115	Lohar Yogesh Abaso	
1742088	Desale Tushar Chudaman		1742116	Bhoine Aniket	

Prof. R. S. Lavate
Coordinator

Prof. S. K. Pawar
H.O.D.

HOD
Mechanical Engineering Dept
Shri Chhatrapati Shivajiraje
College of Engineering
Dhangawadi Tal. Bhor
Dist. Pune - 412206

Tax Invoice

Ekdant
Internet Service Provider

EKDANT COMMUNICATION PVT. LTD.

Office : Hira Smruti Complex Block No. 3,Opp. To Axis Bank
ATM Nasrapur Tal. - bhor, Dist.- Pune MH 412213
Contact No. - 9850112436, 9823664929
www.ekdantcpl.com
ekdantcpl@gmail.com

Invoice No. : INV/18-19/132
Date : 15/01/2019

GSTIN : 27AAECE7745B1ZQ
State Code : MH 27

Details Of Buyers

Bill to,
RAJGAD DNYANPEETH TECHNICAL CAMPUS
Shri Chhatrapati Shivajiraje College of Engg.
Gat. No.-237, Dhangawadi, Tal : Bhor, Dist : Pune, 412206

Sr. No.	Description Of Product / Service	HSN Code	Rate	Months	Amount
1	S2 MBPS Lease line Charges (1 May. 2019 to 30 Oct. 2019)	998422	Rs. 35,278.00	6 Months	Rs. 211,665.00
			Total		Rs. 211,665.00
			Add. CGST 9%		Rs. 19,049.85
			Add. SGST 9%		Rs. 19,049.85
			Grand Total (Rounded off)		Rs. 249,765.00

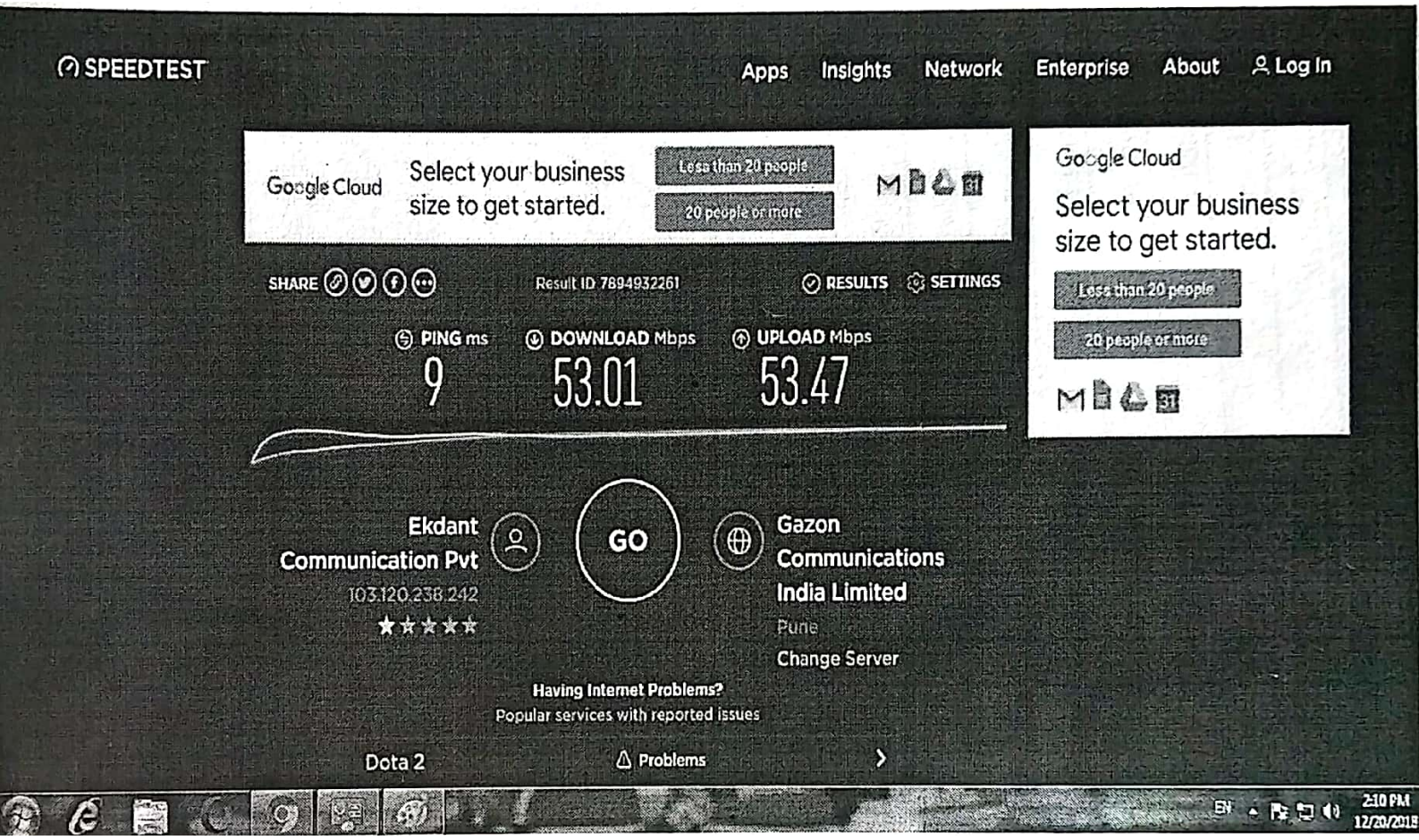
Amount In Word :-Two Lakh Fourty Nine Thousand Seven Hundred Sixty Five Rs.

Sr. No.	HSC / SAC	Taxable Value	Central Tax		State Tax	
			Rate	Amount	Rate	Amount
1	998422	211665.00	9%	19049.85	9%	19049.85
		211665.00		19049.85		19049.85

Bank Details
A/C No. : 083120110000025
Bank : Bank Of India
IFSC : BKID0000831
Branch : Harischandri
PAN : AAECE7745B

Ekdant Communication Private Limited PUNE

For, Ekdant Communication Pvt. Ltd



FDP For Staff and Students by Civil department

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

Department of Civil Engineering

Date-10/09/2015

NOTICE

All the staff members are hereby informed that, we are organizing a Faculty Development Program on **"Design of Plate Girder for Bridge"** so to discuss about arrangement the meeting is scheduled on 14/09/2015 sharp at 03:00 PM in HOD cabin.

Sr. No.	Name of the Faculty	Sign	Sr. No.	Name of the Faculty	Sign
1	Prof. R.V. Mohite		8	Prof. S.P. Salunkhe	
2	Prof. R.R. Chavan		9	Prof. S.V. Bankar	
3	Prof. S.T. Jadhav		10	Prof. S. R. Sutar	
4	Prof. S. D. Shinde		11	Prof. R. B. Kesarkar	
5	Prof. P. D. Karpe		12	Prof. S. P. Atpadkar	
6	Prof. S.S. Upase		13	Prof. O.S. Patil	
7	Prof. K.R. Takale				

G. S. Jadhav
Head of Department
Dept. of Civil Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

REPORT OF FACULTY DEVELOPMENT PROGRAMME

DEPARTMENT: **CIVIL ENGINEERING**

RESOURCE PERSON: **Er. S. S. Shukla**

FROM: Project Incharge, Reliance Infra Construction Ltd., Pune

TITLE/TOPIC: **"Design of Plate Girder for Bridge"**

DAY & DATE: **Wednesday -30.09.2015**

DURATION OF SESSION: **1 day**

FACULTY PRESENT: **25**

CORDINATOR: Prof. G. S. Jadhav

OBJECTIVE: Primary objective of this Development Plan is to enhance the overall knowledge design of plate Girder Bridge for road section. The long-term objective is to help each faculty member make tangible and significant contributions to his/her discipline and institution.

DESCRIPTION: The purpose of this activity is to help enhance professional growth & development in steel design among faculties. In the session the experts guide in very skilful manner the emerging and upcoming technology in Plate Girder Bridge and guided staff about the importance how the Plate Girder Bridge are useful in road section in near future.

CONCLUSION: The one days FDP program at RDTC, SCSCOE Dhangawadi was termed very good to excellent by majority of the participants. Thanks to the combined efforts of all the staff of Department of Civil Engineering.

PHOTOS DURING SESSION:

Prof. G. S. Jadhav
FDP Coordinator

Shri Chhatrapati Shivajiraje College of Engineering, Pune
Civil Engg. Deptt.

Prof. Dr. S. B. Patil
Principal
Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engg.,
Dhangawadi, Pune-412206

॥ प्रज्वलितो ज्ञानमयः प्रदीपः ॥

RAJGAD DNYANPEETH's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Department of Civil Engineering

One Day Faculty Development Programme on

Design of Plate Girder for Bridge

CERTIFICATE OF PARTICIPATION

This is to Certify that, Prof/Mr/Ms/Mrs. Prof. S.P. Salunkhe

Has Participated In One Day Faculty Development Programme Entitled as "Design of Plate Girder for Bridge" held at RD's SCSCOE, Dhangawadi, Bhor, Pune-412206 During 30th September 2015.

Prof. G. S. JADHAV

COORDINATOR

Rajgad Dnyanpeeth's Shri Chhatrapati Shivajiraje College of Engg. DTE:6324 SPPU:4071 Dhangawadi Pune 412206

Prof. DR. S. B. PATIL

PRINCIPAL

Principal
Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engg.,
Dhangawadi, Pune-412206

RAJGAD DNYANPEETH'S

SHREE CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Faculty Development Programme on

"DESIGN OF PLATE GIRDER FOR BRIDGE"

30th September 2015

ABOUT S.C.S.C.O.E.

Pioneer in the field of civil engineering was established in the year 2009. The aim of the institute is to impart high quality technical education. Learning systems at SCSCOE integrate fundamentals with cross domain application. College offer undergraduate programs in Mechanical Civil, E &TC and Computer approved by AICTE and affiliated to Savitribai Phule Pune University. SCSCOE aspires to be the leader in technical education. SCSCOE is excelled in academics, curricular and co curricular.

REGISTRATION FORM

Name:----------

Name of College:----------

Qualification:----------

Designation:----------

Address: ----------

Pin----------

E-mail:----------

Mobile number:----------

Details of registration fees:

DD No.----------amount------

Dated----------bank----------

Date: Signature of Applicant

Shri Chhatrapati Shivajiraje College of Engineering, Pune RD Civil Engg. Deptt.

Signature of Head of Institute & Seal

SHREE CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Faculty Development Programme

on

"DESIGN OF PLATE GIRDER FOR BRIDGE"

30th September 2015

Coordinator

Prof. G. S. Jadhav

(HOD, Civil)

Organized by

DEPARTMENT OF CIVIL ENGINEERING

RAJGAD DNYANPEETH'S

SHREE CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Address for Correspondence

Sr no 237, Off Pune Bangalore highway, Dhangwadi Tal Bhor, Dist Pune pin 412206 Maharashtra , India

Phone: +919730315385/9404769430

Email: civil.scscoe@gmail.com

ABOUT DEPARTMENT

VISION:

1. To achieve excellent standards of quality education by keeping pace with rapidly changing technologies.
2. To create technical manpower of global standards in civil engineering with capabilities of accepting new challenges.

CHIFF PATRONS

- **Hon'ble Anantrao Thopte**
  President, Ex- Education Minister (M. S.)
- **Hon'ble Sangramdada Thopte**
  Trustee, MLA - Bhor-Velha-Mulshi
- **Hon'ble Dr. Bhagyashree Patil**
  Secretary, Rajgad Dnyanpeeth, Bhor (Pune).

PATRONS

- **Prof. Dr. S. B. Patil**
  Principal, RDTC, SCSCOE.

ORGANIZING COMMITTEE:

- Prof. Takale K. R.
- Prof. Salunkhe S.P.
- Prof. Bankar S. V.
- Prof. Atpadkar S. P.
- Prof. Sutar S. R.

OBJECTIVES OF PROGRMEE

1) The purpose of this activity is to help enhance professional growth & development in steel design.
2) The faculty member and the department recognize the following is a guide for identifying and managing professional growth opportunities.
3) Primary objective of this Development Plan is to enhance the overall knowledge design of plate Girder Bridge for road section
4) The long-term objective is to help each faculty member make tangible and significant contributions to his/her discipline and institution.

PROGRMME CONTENT

- **Introduction of Plate Girder**
- **Loading of Plate Girder**
- **Function of Plate Girder in Bridge**
- **Site investigations**
- **Design problems of curve portion**

REGISTRATION FEES

- Registration fees is payable by NEFT/RTGS/DD in favor of "Principal, SCSCOE, Dhangwadi"
- Registration fee includes Workshop kit, Breakfast ,lunch
- No TA, DA will be admissible to any participant.

Boarding & Lodging Assistance will be provided on request.

Registration Fees: Rs. 400

HOW TO APPLY

Draw a DD or Transfer through NEFT/ RTGS. To confirm participation please send scan copy of NEFT/RTGS, DD transaction slip and registration form to civil.scscoe@gmail.com mail id.

In case of DD write down your name and contact number on back side of DD & send it to programme coordinator

IMPORTANT DATES

Last date of Registration: 26/09/2015

Note: Please note the participation is limited; selection will be on first come first serve basis.

॥ प्रज्वलितं ज्ञानमयः प्रदिपः ॥
Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engineering
Approved by AICTE, Govt of Maharashtra and Affiliated to the University of Pune (ID NO PU/PN/Engg/376/2009)
Dr. Bhagyashree s. Patil
Hon. secretary
Anantrao Thopte
Founder President
Ex. Education Minister
Maharashtra State

Date: 30.09.2015

To,

Er. S. S. Shukla,
Project Incharge,
Reliance Infra Construction Ltd,
Pune.

SUBJECT: LETTER OF APPRECIATION

On behalf of Shri Chhatrapati Shivajiraje College of Engineering, I am very pleased to have the honor to give grateful thanks for your expertise FDP session on ***"Design of Plate Girder for Bridge"***. We have experienced such knowledgeable, pro-active & visionary professional who have guided faculties and enlightened us which we will remember for a long time and will expect the same in near future. Also we will be welcoming your suggestions & remarks so that we can improvise ourselves every moment in our career and guide our students in exact direction so that their momentum is never lost.

On basis of overwhelming response we wish to carry forward our fruitful professional relation in near future for the benefits of the students.

Best wishes

Sincerely yours,

Reviewed
Shukla

Prof. G S Jadhav
Head of Department
Dept. of Civil Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Shri Chhatrapati Shivajiraje College of Engineering, Pune
Civil Engg. Dept.

Prof. Dr. S. B. Patil
Principal
Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engg.
Dhangawadi, Pune-412206

॥ प्रज्वलितो ज्ञानमयः प्रदिपः ॥

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering

Approved by AICTE, Govt of Maharashtra and Affiliated to the University of Pune (ID NO PU/PN/Engg/376/2009)

Dr. Bhagyashree s. Patil
Hon. secretary

Anantrao Thopte
Founder President
Ex. Education Minister
Maharashtra State

Date: 02-09-2015

To,
Er. Shukla Sir,
Project Incharge,
Relience Infra Construction Ltd,
Pune.

Dear Sir,

On behalf of Rajgad Dnyanpeeth's Shri Chhatrapati Shivajiraje College of Engineering Dhangwadi, Tal: Bhor, Dist: Pune, I am very pleased to have the honor of inviting you as a resource person at our institute as part of Faculty Development Programme. We would like you to engage session on "***Design of Plate Girder for Bridge***."

We will be arranging the Faculty Development Programme on 30th September 2015. (01th September 2015 as per telephonic discussion with you).

Please let us know if you will require any audio-visual equipment or additional technological support. Also, please keep us informed of your travel itinerary. I look forward to meeting you at our Campus.

Best wishes.

Sincerely yours,

Reieved Shukla

Prof. G. S. Jadhav
Head of Department
Dept. of Civil Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Civil Engg. Dept.

Prof. Dr. S. B. Patil
Principal
Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Gat No. 237, Pune Bangalore High-way, Dhangawadi, Tal. Bhor, Dist. - Pune. Pincode - 412206. Telefax. : 02113-282456 / 556 / 656
Email : scscoe@gmail.com Website : www.scshivajirajecoe.com

Rajgad Dynapeeths

Shri Chhatrapati Shivajiraje College of Engineering

Dhangwadi, Tal: Bhor, Dist: Pune, 412206.

One Day **Faculty Development Programme** on **DESIGN OF PLATE GIRDER FOR BRIDGE** (SEP 30TH 2015)

PARTICIPANTS ATTENDANCE

Sr. No.	Name of Participant	Session 1 (10.30 am to 12.30 pm)	Session 2 (1.15 am to 3.50 pm)	Session 3 (4.00 am to 5.00 pm)
1	Gwati Pandurang Kale			
2.	Rohit Deshmukh			
3.	Nitin Khatmode			
4.	Abhay Shelar			
5	sabale vishal			
6	Shitole Ganesh shivdas.			
7	Devanand Mokashi			
8	Kamini Ghodup			
9	Itape Sachin Balasaheb			
10	Pravin A. Manatkar			
11	Sawant Suraj			
12	Mangesh Kevadkar			
13	Ruskikesh Kadegaonkar			
14	A. D. Kulkarni			
15	P. M. Revane			
16	Suraj shinde			
17	Meena Sanas			
18	Neeraj A. Gangurade			
19	kagale Sujan			
20	Kate Dinesh			

Rajgad Dynapeeths

Shri Chhatrapati Shivajiraje College of Engineering

Dhangwadi, Tal: Bhor, Dist: Pune, 412206.

One Day **Faculty Development Programme** on **DESIGN OF PLATE GIRDER FOR BRIDGE** (SEP 30TH 2015)

PARTICIPANTS ATTENDANCE

Sr. No.	Name of Participant	Session 1 (10.30 am to 12.30 pm)	Session 2 (1.15 am to 3.50 pm)	Session 3 (4.00 am to 5.00 pm)
21	Ganesh Jarad			
22	S. M. Banduke			
23	V. V. Shelar			
24	Uday B. Pathak			
25	M. V. Bhoie			

Rajgad Dynapeeths

Shri Chhatrapati Shivajiraje College of Engineering

Dhangwadi, Tal: Bhor, Dist: Pune, 412206.

One Day **Faculty Development Programme** on **DESIGN OF PLATE GIRDER FOR BRIDGE** (SEP 30^{TH} 2015)

REGISTRATIONS DETAILS

Sr. No.	Name	Designation	Name of Institute/ Organization	Educational Qualification	Address for Correspondance	Email Id	Mobile No.	Fees/ Chaque	Sign
1	Swati P. Kale	Asst. Prof	D.Y. Patil, lohegaon	M.E (str.)	D.Y. Pune	swatikale14@gmail.com	9860335705	SPPU	
2	Rohit Deshmukh	Asst. Prof	D.Y. Patil, Nigdi	M.E (C.M)	Pune	rohit16007@gmail.com	7507729877	SPPU	
3.	Sabale vishal	Asst-Prof	BVCOE, lavale	ME (str)	pune	sabalevd8211@gmail.com	9604871775	SPPU	
4.	Pravin Manatkar	—"—	TACOE, Pisoli	—"—	Pune	pravinmanatkar@gmail.com	9273649546	SPPU	
5.	Nitin Khatmode	Asst Prof	BSCOER, Narhe	ME (Civil Eng)	Narhe, Pune	nitinkhatmode@gmail.com	7387888989	—"—	
6.	Kagade Sujay	Asst. Prof	SSSPM, COE,	ME str.	Someshwar, Ngr	sskagade111@gmail.com	9665755572	SPPU	
7.	Shitole Ganesh S.	Asst. Prof.	ACOEM	ME str.	Moranji, Pune	ganeshss@gmail.com	9021588152	SPPU	
8.	Rushikesh Kadegaonkar	Asst. Prof	NESGI	ME	Warje pune	rushikesh.1990@gmail.com	9633686685	SPPU	
9.	Suraj Shinde	Asst. Prof	JSPM Wagholi	ME	JSPM Wagholi	shindesuraj@gmail.com	8149597960	SPPU	
10	Devanand Mokashi	Asst. Prof	BVPCOE, lavale	ME hydro	Lavale, pune	dev.mokashi@gmail.com	9890301504	SPPU	
11	Meena Sanas	—"—	NESGOI	ME	Narhe, pune	meenasanas@gmail	8408953659	SPPU	
12	Itape Sachin Babasheb	Asst Prof.	Someshwar college of Engg.	M.E (Str.)	Baramati		7720013727	SPPU	
13	Mangesh Kevadkar	—"—	UCOER	—"—	Sasewadi, Pune	mageshkev@gmail.com	9766291210	—"—	
14	Sawant Suresh	Asst. prof	NESGI, Pune	ME (cm)	pune	suresh2012@gmail	9875297037	SPPU	
15	Abhay Shelar	—"—		ME CM		abhay8@gmail.com	9850543385	—"—	
16	P.M Revane	—"—		ME	Pune	revanepm@gmail.com	9850959477	SPPU	
17	Kamini Ghodap	Asst. Prof	BSCOER, Narhe	ME	pune	ghodapk1990@gmail	9975663502	SPPU	
18	Kate Dinesh	Asst. Prof.	Someshwar College of Engg	M.E. Str	Baramati		9762211484	SPPU	
19	Neeraj A. Gangurde	Lecturer	UCOER	ME (CM)	Sasewadi, Pune	neeraj555@yahoo.co.in	7020404254	SPPU	
20	Ganesh Javad.	Asst. prof.	PVPIT	—"—	Bavdhan, pune	ganeshJP@gmail.com	9766104119	—"—	

Shri Chhatrapati Shivajiraje College, Civil Engg. Dept.

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering

Dhangwadi, Tal: Bhor, Dist: Pune, 412206.

One Day **Faculty Development Programme** on **DESIGN OF PLATE GIRDER FOR BRIDGE** (SEP 30TH 2015)

REGISTRATIONS DETAILS

Sr. No.	Name	Designation	Name of Institute/ Organization	Educational Qualification	Address for Correspondance	Email Id	Mobile No.	Fees/ Chaque	Sign
21	S.m Bandute	Asst Prof	DCOE	ME Civil	Bhigwan	smb1221@gmail.com	9822781415	SPPU	
22	V.V. Shelar.	Asst Prof.	TCOER.	ME civil	Pisoli, Pune	vvshelar@gmail.com	9922369910	SPPU	
23	M.V. Bhoie	-11-	-11-	-11-	-11-	mvbhoire@yahoo.co.in	9555660101	SPPU	
24	U.R Patholo	-11-	JSPM,	M.Civil	Wagholi	Udyp123@gmail.com	8605334233	SPPU	
25	A.D. Kalkarni	Asst. Prof	ZCOER.	-11-	Narhe, Pune	adk@yahoo.co.in	9923155757	SPPU	

Shri Chhatrapati Shivajiraje College of Engineering, Pune
Civil Engg. Deptt.

ABOUT THE FDP

Girder bridges are structurally the simplest and the most commonly used on short to medium span bridges. Steel I-section is the simplest and most effective solid section for resisting bending and shear. The load effects (such as bending moment and shear force) are to be found using individual and un-factored load cases. Based on these, the summation of load effects due to different load combinations for various load factors is obtained. Since bridges are subjected to cyclic loading and hence are vulnerable to fatigue, redistribution of forces due to plastic mechanism formation is not permitted under BS 5400: Part - 3. The use of plate girders rather than rolled beam sections for the two main girders gives the designer freedom to select the most economical girder for the structure.

OBJECTIVES OF PROGRMEE

1) The purpose of this activity is to help enhance professional growth & development in steel design.
2) The faculty member and the department recognize the following is a guide for identifying and managing professional growth opportunities.
3) Primary objective of this Development Plan is to enhance the overall knowledge design of plate Girder Bridge for road section
4) The long-term objective is to help each faculty member make tangible and significant contributions to his/her discipline and institution.

PROGRMME CONTENT

- **Introduction of Plate Girder**
- **Loading of Plate Girder**
- **Function of Plate Girder in Bridge**
- **Site investigations**
- **Design problems of curve portion**

TARGET PARTICIPANTS

Faculty members, Professionals, Technocrats etc from civil engineering

REGISTRATION DETAILS

- Registration for faculty members of SPPU Pune is free and Rs. 100/- in cash or D.D./ Cheque for other participants is to be drawn in the favor of Principal, SCSCOE.
- No TA, DA will be admissible to any participant.

Boarding & Lodging Assistance will be provided on request.

IMPORTANT DATES

Last date of Registration: 26/09/2015

Note: Please note the participation is limited; selection will be on first come first serve basis.

REGISTRATION FORM

Name: Itape Sachin Balasaheb

Name of College: Someshwar College of Engg. Someshwar, Baramati

Qualification: M.E. Structure.

Designation: Asst. Prof.

Address: Baramati (Idapur road)

Tal-Baramati, Dist-Pune

Pin----------

E-mail: itape.sachin@gmail.com

Mobile number: 7720013727

Details of registration fees:

DD/Cash

DD No.----------amount------

Dated---------bank----------

Date: Itape

Signature of Applicant

Civil Engg. Detail

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

Department of Civil Engineering

Faculty Development Programme on *Design of Plate Girder for Bridge*

FEEDBACK ANALYSIS REPORT

Sr. No.	Particulars	Strongly Agree				Strongly Disagree
		1	2	3	4	5
1	The content was as described in publicity materials	47.62 %	9.52 %	0	28.57 %	14.29 %
2	The FDP was applicable to my job	33.33 %	23.81 %	23.81 %	9.52 %	9.52 %
3	I will recommend this FDP to other conservators	4.76 %	47.62 %	19.05 %	23.81 %	4.76 %
4	The program was well paced within the allotted time	19.05 %	33.33 %	23.81 %	14.29 %	9.52 %
5	The resource persons was a good communicator	9.52 %	47.62 %	9.52 %	23.81 %	9.52 %
6	The material was presented in an organized manner	14.29 %	47.62 %	9.52 %	19.05 %	9.52 %
7	The resource person was knowledgeable on the topic	33.33 %	19.05 %	28.57 %	9.52 %	9.52 %
8	I would be interested in attending a follow-up, more advanced FDP on this same subject	28.57 %	38.10 %	4.76 %	28.57 %	0
Total		23.81 %	33.33 %	14.88 %	19.64 %	8.33 %

Workshop Coordinator

Shri Chhatrapati Shivajiraje College of Engineering, Pune
Civil Engg. Deptt.

Prof. G. S. Jadhav
Head of Department
Dept. of Civil Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

Feedback Form

Your feedback is critical for us to ensure we are meeting your educational needs. We would appreciate if you could take a few minutes to share your opinions with us so we can serve you better.

Faculty Development Programme on *Design of Plate Girder for Bridge*

Date: 30/09/2015 **Organized by:** Department of Civil Engineering

	Strongly agree				Strongly disagree
1. The content was as described in publicity materials	(1)	2	3	4	5
2. The FDP was applicable to my job	(1)	2	3	4	5
3. I will recommend this FDP to other conservators	1	(2)	3	4	5
4. The program was well paced within the allotted time	1	(2)	3	4	5
5. The resource persons was a good communicator	(1)	2	3	4	5
6. The material was presented in an organized manner	(1)	2	3	4	5
7. The resource person was knowledgeable on the topic	(1)	2	3	4	5
8. I would be interested in attending a follow-up, more advanced FDP on this same subject	(1)	2	3	4	5

9. Given the topic, was this FDP: ☐ a. Too short ☑ b. Right length ☐ c. Too long

10. In your opinion, was this FDP: ☐ a. Introductory ☐ b. Intermediate ☑ c. Advanced

11. What did you most appreciate/enjoy/think was best about the course? Any suggestions for improvement?

Thank you!
Please return this form to the organizer at the end of the FDP.

Shri Chhatrapati Shivajiraje College of Engineering Civil Engg. Dept. Pune

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

DEPARTMENT OF E & TC ENGINEERING

Class: T.E E&TC

SYSTEM PROGRAMMING & OPERATING SYSTEM

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

DEPARTMENT OF E & TC ENGINEERING

LAB MANUAL

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

DEPARTMENT OF E & TC ENGINEERING

Experiment No. 1

Title: Basic Linux Commands

Aim: To Study and implement of Basic Linux Commands

Objectives: After performing this experiment, the learner will be able to use basic Linux commands and observe the output on terminal.

Apparatus: Personal Computer with Linux Operating System

Theory:

Linux:

Linux is a full UNIX clone, fit for use on workstations as well as on middle-range and high-end servers. Today, a lot of the important players on the hard- and software market each have their team of Linux developers; at your local dealer's you can even buy pre-installed Linux systems with official support – even though there is still a lot of hard- and software that is not supported, too.

Linux is well-known as a stable and reliable platform, providing database and trading services for companies like Amazon, the well-known online bookshop, US Post Office, the German army and many others. Especially Internet providers and Internet service providers have grown fond of Linux as firewall, proxy- and web server, and you will find a Linux box within reach of every UNIX system administrator who appreciates a comfortable management station. Clusters of Linux machines are used in the creation of movies such as "Titanic", "Shrek" and
others.

Everything a good programmer can wish for is available: compilers, libraries, development and debugging tools. These packages come with every standard Linux distribution. The C-compiler is included for free

Basic Commands

1. ls : by this command we can see only file name nothing else
   syntax :[root@nettech root]$ ls

2. ls –la : by this command we can also see the hidden files.
   syntax :[root@nettech root]$ ls –la

3. clear: it will clear the screen(short cut ctl+l)
   syntax :[root@nettech root]$clear

4. exit: to end a current session as well current terminal logging
   syntax: [root@nettech root]$exit

5. touch: to create a new empty file
   syntax: [root@nettech root]$touch

6. cd: to change the working/present directory
   syntax: [root@nettech root]$cd /home/mango
   where '/home/mango' is the desired directory to be change from '/root'

7. cat: to view the contents of a file and it is also used for creating a new file with some contents
   syntax: [root@nettech root]$cat <file name>

8. mkdir : to make a new directory
   syntax: [root@nettech root]$mkdirnewdirname

9. rm: to remove a empty file
   syntax: [root@nettech root]$rm filename

10. .rmdir to remove a empty directory
    Syntax: [root@nettech root]$rmdirdirectoryname

11. cp: to copy something in a destination file or directory
    syntax: [root@nettech root]$cpsourcepathdestinationpath

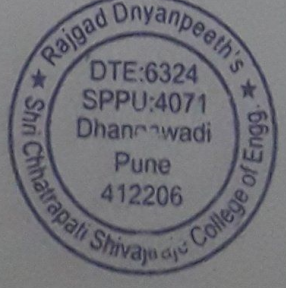
12. mv: to move one file or directory from one place to another place, it is also used for renaming or file
    syntax: [root@nettech root]$mv source destination
    [root@nettech root]$mv oldfilenamenewfilename [to change the file name]

13. man :to view the mannual page of commands for syntax
    syntax: [root@nettech root]$man commandname

14. pwd :to view the present working directory
    syntax: [root@nettech root]$pwd

15. date: Show the current date and time
    syntax: [root@nettech root]$date

16. cal :Show this month's calendar
    syntax: [root@nettech root]$cal



Procedure:

1. Start Linux virtual box
2. Open "Terminal"
3. Type each command in the given syntax format
4. Note each output and practice to get used to the OS.

Conclusion:

Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

Dept.: Civil Engineering **Academic Year:** 2017-18

SITE VISIT REPORT

Date: - 24/03/2018

1) **Class:** B.E Civil
2) **Subject:** Dams and Hydraulics Structure
3) **Name of Site:** Central Water and Power Research Station ,Khadkawasla, Pune
4) **Date & Time:**23/03/2018& 10.00am To 4.00 pm
5) **Present Students/Staff:**38/02
6) **Contact Person with Designation & Phone No.:** Sci. Mrs. Vaishali Gadhe& Supportive staff: - Mr. S.B. Apte, MobileNo.9765293400.
7) **Name of Faculty:** Prof. S.P. Salunkhe and Prof. G. S. Jadhav

As a part of academic curriculum, we visited the above site. We observed & studied the following things.

Content of studies:

i. Study of Earthen dam-Jigaon dams ,spillway model ,Current meter
ii. Types of Failure of earthen dam
iii. General Information regarding Jigaon dam and spillway

Photos:-

Photo No.1.Model of flushing sediment reservoir

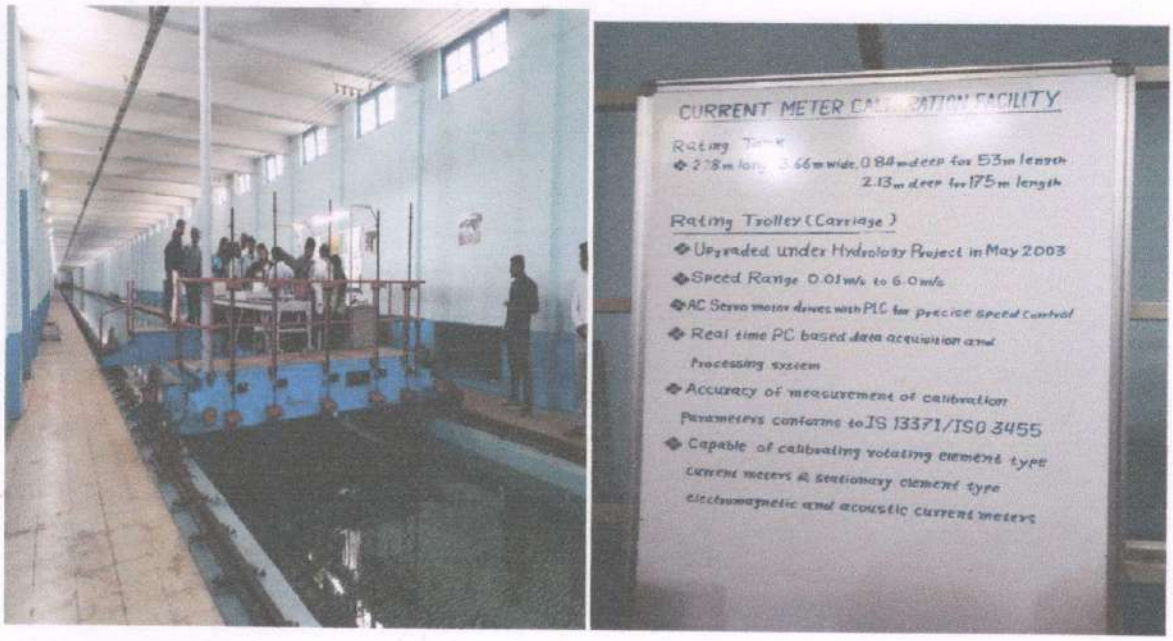


Photo No.2.Cuurent meter instrument

Photo No.3. Jigaon dam spillway Model and Map

Photo No.4Jigaon model, CWPRS, Pune

Photo No.5 -Prof. Jadhav sir given token of flower to Mr. Apte sir

Feedback-

Site visit was very successful. We are extremely thankful to our Honorable Principal Prof. Dr. S.B Patil, who permitted us for visit, also thankful to H.O.D Of Civil Engineering Prof. G.S. Jadhav sir and also thankful to Sci. Mrs. Vaishali Gadhe of CWPRS, Pune'who guided students and explained all components & working operations.

Prof. S. P. Salunkhe
Faculty In-charge

Shri Chhatrapati Shivajiraje College of Engineering Pune
Civil Engg. Deptt.

Prof. G. S. Jadhav
Head of Department
Dept. of Civil Engineering
Shri Chh. Shivajiraje College of Engg.
Dhangawadi, Pune-412206

Visit to CWPRS

Inbox x

?

CRO(TC) CWPRS <cro_tc@cwprs.gov.in> 3:29 PM (20 hours ago)

to me

To,

Shri. Chhatrapati Shivijiraje
College of Engineering,
S No. 237,
Dhangwadi, Bhor, Pune

Sir,

With reference to your Mail dated: 13/03/2018 requesting permission for visit of 44 students along with Two faculty members to this office, this is to inform you that they are welcome to visit CW&PRS on 23/03/2018 during 10.30 hrs. to 13.00 hrs.

Contact No. Shri. V.R. Vedpathak (9822861364) Shri. S.B. Apte (9156112800)

Please note that Students are not allowed on two wheelers. The students may be accommodated in a single bus, preferably a small bus, as big buses can't be maneuvered in the campus. Bus will be not provided from CWPRS, You have to arrange your own bus service.

धन्यवाद,

भवदीय,

डॉ. प्रशात चन्द्र / Dr. Prabhat Chandra
वैज्ञानिक - डी (तकनीकी समन्वय) / Scientist-D (Technical Coordination)
भारत सरकार / Government of India
जल संसाधन, नदी विकास और गंगा संरक्षण मंत्रालय / Ministry of Water Resources, River Development & Ganga Rejuvenation
केन्द्रीय जल तथा विद्युत अनुसंधान शाला / CENTRAL WATER AND POWER

RESEARCH STATION

॥ प्रज्वलितो ज्ञानमयः प्रदिपः ॥
Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engineering
Approved by AICTE, Govt of Maharashtra and Affiliated to the University of Pune (ID NO PU/PN/Engg/376/2009)
Dr. Bhagyashree s. Patil
Hon. secretary
Anantrao Thopte
Founder President
Ex. Education Minister
Maharashtra State

Ref. No.: RD/SCSCOE/VISIT/2017-18/720

Date: 28/02/2018

To,
The Director
CWPRS,
Khadakwasala, Pune.

Subject: - Regarding permission for academic site visit.

Respected Sir,

Our Rajgad Dnyanpeeth's, Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi (Bhor) is affiliated to Savitribai Phule Pune University. As per the curriculum of Savitribai Phule Pune University for Final year students of Civil Engineering, We are planning an academic visit at research center under Dams & Hydraulics Structure and Hydropower Engineering Subject This visit will enhances the skill of students to encourage creative thinking process to help them to get confidence about the actual field work. Details about number of students & tentative dates are given below,

- **Name of Faculty-Asst. Prof. S. P. Salunkhe**
- **No of Students- 44**
- **No of Faculty members-02**
- **Tentative Date-23-08-2018**

Kindly do the needful.

Thanking you.

Recd
05/03/18
(PA to D CWPRS)

Prof. Dr. S. B. Patil
Principal
Rajgad Dnyanpeeth's
Shri Chhatrapati Shivajiraje College of Engg.,
Dhangawadi, Pune-412206

Rajgad Dnyanpeeth's

Shri Chhatrapati Shivajiraje College of Engineering, Dhangawadi

UNDERTAKING

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A.Y: 2017-18

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1741002	HANKARE NILESH SHANKAR		1741024	BHISE JITENDRA MAHADEV	
1741003	SHINDE AJEENATH NARAYAN		1741025	PATIL ANIKET BHAU	
1741004	GAIKWAD NIKHIL PANDURANG		1741026	BODKHE ANKITA ANANTA	-AB-
1741005	PAWAR PRATHMESH ANIL		1741027	KATKAR PRASHANT SATISH	-AB-
1741006	SHEWALE AMOL SUBHASH		1741028	DEVAKATE RAVAJI SHANTAPPA	
1741007	MAGDUM ARCHANA PRAKASH		1741029	PATIL ARJUN RAMCHANDRA	
1741008	SALUNKHE PRIYANKA TANAJI	-AB-	1741030	TALEKAR ASHUTOSH SUDHAKAR	
1741009	PAYGUDE SAYALI VIJAY		1741031	UMBARE SAMADHAN MHASU	
1741010	DHUMAL PRIYANKA SANJAY		1741032	GOTMUKLE VINOD ASHOK	-AB-
1741011	PAWAR BHAGYASHRI DADASO		1741033	SHIVATARE CHETAN CH.	
1741012	VHANMANE SUNIL SUKHDEV		1741034	BHELKE PRATIK RAJENDRA	
1741013	BHOSALE MEGHA GAJANAN		1741035	RAUT AJINKYA PRALHAD	
1741014	POL SAYALI SUDHAKAR		1741036	GAVHANE GANESH BALU	
1741015	PATIL PRASHANT SUNIL		1741037	MEMANE JANARDAN PRAKASH	
1741016	RAUT VAIBHAV LIMBAJI		1741038	SONAWANE SHUBHAM SH.	
1741017	SHINDE AKSHAY RAJARAM		1741039	BHATALE MANISH DURYODHAN	
1741018	DALVI SWAPNALI GAJANAN		1741040	KHANDALE KETAN JAGANNATH	-AB-
1741019	SABALE AKSHAY JITENDRA		1741041	KASEKAR RAHUL MURLIDHAR	
1741020	SAWANT NILESH RAMESH		1741042	JINGAR SHAMSUNDAR ANIL	
1741021	PATIL SURAJ NIVRUTTI		1741043	SHETE RUPESH DILIP	
1741022	TEMBARE NARAYAN VITTHAL	-AB-	1741044	SINGH AMBHOJ NAYNAM S.	

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