

# Poornima Group of Colleges, Jaipur

Session: 2011-12 (ODD Sem.)

**Name of College: POORNIMA COLLEGE OF ENGINEERING**

**Department of ELECTRICAL**

## Zero Lecture

Name of Faculty: S. P. SRIVASTAVA

Branch: ELECTRICAL

### 1). Name of Subject with Code:

#### 2). Self-Introduction:

a). Name: S. P. SRIVASTAVA

b). Qualification: B. Tech.

c). Designation: Assistant Professor

d). Research Area: Power System

e). E-mail Id: luck.good587@gmail.com

f). Other details: Information about areas of proficiency/ expertise such as subject taught, laboratory taken, Member of Professional body, Academic Proficiency, Book Authored, Paper published in National and International Conference/Journals etc.

### 3). Introduction of Students:

a). Identifying and keeping records of students based on merit/ weak in academics, smart/ dull in extra & co-curricular activity, day scholar/ hosteller, Hindi or English medium, urban or rural family background, their learning style (seeing, hearing, doing) etc.

b). Achievement of students in previous years

Sr. No.	Year	Result At PCE	Univ. Result (In %)	Name of student scored highest marks with the scored marks.	Fail (no. of students)	Marks between 40%-60% (no. of students)	Marks 60% above (no. of students)

### 4). Instructional Language: - 80%English; 20% Hindi (English not less than 60%)

5). Introduction to subject: - (Pl. separate out subject specific matter and general matter valid for all subjects and group/place them appropriately)

#### a). Relevance to Branch:

This is very important subject to the EE Branch because emphasis is placed on the dynamic behavior of the processes and processing equipment. It tells about the working of instrument. This is very useful in determining the physical parameter. As in the competitive world of today everyone has to be competent in certain respect. This subject increases and sharpens the thinking power of mind. That is the reason this subject is used in various competitive exams and in job scenario.

#### b). Relevance to Society:

Modern Industry relies heavily on automation for economic viability and mass production. The availability of sophisticated electrical equipments and variety of rating has great improved not only the quality of the products but also contribution to reduction of costs. In the present time, it is impossible to think of industrial production with Utilization of Electrical Power. Students of engineering are therefore

called upon to learn the rudiment of electrical equipment and control strategies very early in their graduation courses.

*c). Relevance to Self:* This subject moves us to the depth of practical Knowledge. The subject has become interesting with the advent of Electrical instrument and measurement and all the equipment becoming intelligent. If one is interested in the practical applications then this is useful like in further studies, in projects. As this subject brushes up the thinking power so we come up to the most optimum utilization of things and subjects.

*d). Relation with laboratory:*

This subject is a practical subject i.e. most of the topics are practical with some important structures and their functioning and it moves us to the depth of practical Knowledge.

*e). Connection with previous year and next year:*

In the previous year student had studied basic of Utilization of electrical power equipments.

## **6). Syllabus of Rajasthan Technical University, Kota**

*a). Index Terms/ Key Words:*

*b). RTU Syllabus with Name of Subject & Code*

### **7EE4 UTILIZATION OF ELECTRICAL POWER**

Unit-1 **(i)Electric Heating:** Different methods of electric heating. Principle of high frequency induction and di-electric heating. Construction, operation, performance and applications of arc furnace and induction furnace. **(ii) Electric Welding:** Welding process, welding transformer, Classification of Electric Welding: arc welding, resistance welding, welding of various metals.

Unit-2 **Illuminations:** Definitions, laws of illuminations, polar curves, luminous efficiency, photometer, incandescent lamps: filament materials, halogen lamp. electric discharge lamps: sodium vapour lamp mercury vapour lamp and fluorescent lamp. **Light Calculations:** commercial, industrial, street and flood lighting.

Unit-3 **Electrolytic Process:** Principles and applications of electrolysis, electro-deposition, manufactures of chemicals, anodizing, electro polishing electro-cleaning, electroextraction, electrorefinig, electro-stripping (parting) power supplies for electrolytic process.

Unit-4 **Electric Traction & Means of Supplying Power:** Systems of Electric Traction: DC & AC Systems, Power Supply for Electric Traction System: Comparison and application of different systems. Sub-station equipment and layout, conductor rail & pantograph.

Unit-5 **Traction Methods:** Types of services, speed time and speed distance curves, estimation of power and energy requirements, Mechanics of train movement. Co-efficient of adhesion, Adhesive weight, effective weight. **Traction Motor Controls:** DC and AC traction motors, Series parallel starting. Methods of electric braking of traction motors.

*c). ABC analysis (RGB method) of unit & topics*

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## 7). Books/ Website/Journals & Handbooks/ Association & Institution:

a). *Recommended Text & Reference Books and Websites:*

S. No.	Title of Book	Authors	Publisher	Cost (Rs.)	No. of books in Library
Text Books					
T1	U E P	H PRATAP	DHANPAT RAI		20
T2					
T3					
Reference Books					
R1					
R2					
R3					
Websites related to subject					
1					
2					

b). *Journals & Handbooks:* - To give information about different Journals & Handbooks available in library related to the subject and branch.

c). *Associations and Institutions:* - To give information about different Associations and Institutions related to the subject and branch.

## 8). Syllabus Deployment: -

a). *Total weeks available for academics (excluding exams/ holidays) as per PGC calendar-*

Semester	I	III	V	VII
No. of Working days available(Approx.)	79	76	76	72
No. of Weeks (Approx.)	13	12.5	12.5	12

- Total weeks available for covering RTU syllabus- 10-11 weeks (Approx.)
- Total weeks available for special activities (as mentioned below)- 02 weeks (Approx.)

**Note: Individual faculty must calculate the exact no. of lectures available according to time table etc. after consultation with HOD.**

b). *Special Activities* (To be approved by HOD, Dean & Campus Director & must be mentioned in deployment):

- Open Book Test- Once in a semester
- Quiz (50% Technical & 50% Aptitude)- Once in a semester

- Special Lectures (SPL)- 10% of total no. of lectures including following
  - i. One PPT by the faculty, who is teaching the subject
  - ii. SPL by expert faculty at PGC level
  - iii. SPL by expert from industry/academia (other institution)
- Revision classes:- 1 to 3 turn at the end of semester (Before II Mid Term Exam)
- Solving Important Question Bank- 1 Turn before I & II Mid Term Exam (each) - Total Two turn.

c). *Lecture schedule per week*

- i). University scheme (L+T+P) = 3+1/0+0
- ii). PGC scheme (L+T+P) = 3/4+1/0+0

Sr. No.	Name of Unit	No. of lectures	Broad Area	Degree of difficulty (High/Medium/Low)	No. of Question in RTU Exam.	Text/ Reference books
1.						
2.						
3.						
4.						
5.						

d). *Introduction & Conclusion:* Each subject, unit and topic shall start with introduction & close with conclusion. In case of the subject, it is Zero lecture.

e). *Time Distribution in lecture class:* - Time allotted: 60 min.

- i. First 5 min. should be utilized for paying attention towards students who were absent for last lecture or continuously absent for many days + taking attendance by calling the names of the students and also sharing any new/relevant information.
- ii. Actual lecture delivery should be of 50 min.
- iii. Last 5 min. should be utilized by recapping/ conclusion of the topic. Providing brief introduction of the coming up lecture and suggesting portion to read.
- iv. After completion of any Unit/Chapter a short quiz should be organized.
- v. During lecture student should be encouraged to ask the question.

**Note:** Pl. ensure that each student is having Lecture Note Book. Pl. Write on the black board day and date, name of the teacher, name of sub. with code, unit and lecture no. and topics to be covered at the beginning of each lecture and ensure that students write in lecture note book. Ask students to leave 4/5 pages blank for copying the note from fellow students in case of their absenteeism.

**9). Tutorial: - An essential component of Teaching- Learning process in Professional Education.**

Objective: - To enhance the recall mechanism.

To promote logical reasoning and thinking of the students.

To interact personally to the students for improve numerical solving ability.

a). *Tutorial processing:* - Tutorial sheet shall be provided to each students

I<sup>st</sup> Phase: - It is consisting of questions to be solved in the class assignment session in test mode on perforated sheet given in tutorial notebook and to be collected & kept by respective faculty for review & analysis (20 minutes).

II<sup>nd</sup> Phase: - Indicating/Initializing the weak issues/ drawback and Evaluating and providing the grade. Making a group with good student for assisting the weak students to explain/solve questions by every student on plain papers given in tutorial note book (20 minutes).

III<sup>rd</sup> Phase: - Solving/ explaining difficulties of lecture class and providing the new home assignment (20 minutes). To be done in tutorial note book.

b). *Home assignment shall comprise of two parts:*

Part (i) Minimum essential questions, which are to be solved and submitted by all with in specified due date.

Part (ii) Other important questions, which may also be solved and submitted for examining and guidance by teacher.

**10). Examination Systems:**

<b>Sr. No.</b>	<b>Name of the Exam</b>	<b>Max. Marks</b>	<b>% of passing marks</b>	<b>Nature of paper Theory + Numerical</b>	<b>Syllabus coverage (in %)</b>	<b>Conducted by</b>
1.	Ist Mid Term Exam	40	40	30+10	60	PGC
2.	IInd Mid Term Exam	40	40	30+10	40	PGC
3.	University (End) Term Exam	80	30	60+20	100	RTU

**11). Any other important point:**

Place &amp; Date:

Name of Faculty with Designation