K.L.N. COLLEGE OF ENGINEERING

POTTAPALAYAM - 630 612 (11KM from Madurai City)

SIVAGANGAI DISTRICT, TAMILNADU, INDIA

An ISO 9001:2015 Certified Institution

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Approved by AICTE, New Delhi

Permanently Affiliated to Anna University, Chennai

Accredited by NBA up to 30.06.2019

Recognized Research Centre of Anna University, Chennai

STUDENTS HAND BOOK

FOR VIII SEMESTER

ELECTRICAL AND ELECTRONICS ENGINEERING

Anna University, Chennai

Regulation - 2013

(Even Semester 2017-2018)

K.L.N. COLLEGE OF ENGINEERING

Department of Electrical and Electronics Engineering

STUDENTS HAND BOOK

B.E. – EEE – VIII– Semester – Even Semester of 2017 – 2018

This book contains the following:

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VISION AND MISSION OF THE COLLEGE

VISION

To become a Premier Institute of National Repute by Providing Quality Education, Successful Graduation, Potential Employability and Advanced Research & Development through Academic Excellence.

MISSION

To Develop and Make Students Competent Professional in the Dynamic Environment in the field of Engineering, Technology and Management by emphasizing Research, Social Concern and Ethical Values through Quality Education System.

VISION AND MISSION OF THE DEPARTMENT

VISION

To become a high standard of excellence in Education, Training and Research in the field of Electrical & Electronics Engineering and allied applications.

MISSION

To produce excellent, innovative and Nationalistic Engineers with Ethical Values and to advance in the field of Electrical & Electronics Engineering and allied areas.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

The Educational Objectives of the Electrical and Electronics Engineering (EEE) Program represent major accomplishments that we expect our graduates to achieve after three to five years of graduation. More specifically our graduates are expected:

PEO1: to excel in industrial or graduate work in Electrical and Electronics Engineering and allied fields

PEO2: to practice their Professions conforming to Ethical Values and Environmentally friendly policies

PEO3: to work in international and multi-disciplinary Environments

PEO4: to successfully adapt to evolving Technologies and stay current with their Professions

PROGRAM SPECIFIC OUTCOMES (PSOs)

Electrical and Electronics Engineering Graduates will be able to:

PSO1: Apply the fundamentals of mathematics, science and engineering knowledge to identify, formulate, design and investigate complex engineering problems of electric circuits, analog and digital electronic circuits, electrical machines and power systems.

PSO2: Apply appropriate techniques and modern Engineering hardware and software tools in power systems to engage in life- long learning and to successfully adapt in multi disciplinary environments.

PSO3: Understand the impact of Professional Engineering solutions in societal and environmental context, commit to professional ethics and communicate effectively.

PROGRAM OUTCOMES (POs)

Electrical and Electronics Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the `consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

OUTCOME BASED EDUCATION (OBE)

In a traditional education system, students are given grades and rankings compared to each other. Content and performance expectations are based primarily on what was taught in the past to students of a given age. The goal of traditional education was to present the knowledge and skills of an older generation to the new generation of students, and to provide students with an environment in which to learn. The process paid little attention (beyond the classroom teacher) to whether or not students learn any of the material.

An outcome is a culminating demonstration of learning; it is what the student should be able to do, at the end of a course/program, in-terms of the knowledge, skill and behavior.

Outcome-based education is an approach to education in which decisions about the curriculum are driven by the exit learning outcomes that the students should display at the end of the course. In outcome-based education, product defines process. Outcome-based education can be summed up as results-oriented thinking and is the opposite of input-based education where the emphasis is on the educational process. Outcome-based education promotes fitness for practice and education for capability.

BENEFITS AND SIGNIFICANCE OF ACCREDITATION

The process of accreditation helps in realizing a number of benefits, such as:

- Helps the Institution to know its strengths, weaknesses and opportunities
- Initiates Institutions into innovative and modern methods of pedagogy
- Gives Institutions a new sense of direction and identity
- Provides society with reliable information on quality of education offered
- Promotes intra and inter-Institutional interactions

Accreditation signifies different things to different stakeholders. These are:

Benefits to Institutions

Accreditation is market-driven and has an international focus. It assesses the characteristics of an Institution and its programme against a set of criteria established by National Board of Accreditation. NBA's key objective is to contribute to the significant improvement of the Institutions involved in the accreditation process. Accreditation process quantifies the strengths, weaknesses in the processes adopted by the Institution and provides directions and opportunities for future growth. NBA provides a quality seal or label that differentiates the Institutions from its peers at the national level. This leads to a widespread recognition and greater appreciation of the brand name of Institutions and motivates the Institutions to strive for more.

Benefits to Students

Students studying in NBA accredited Institutions can be assured that they will receive education which is a balance between high academic quality and professional relevance and that the needs of the corporate world are well integrated into programs, activities and processes. It signifies that he has entered the portals of an Institution, which has the essential and desirable features of quality professional education.

Benefits to Employers

Accreditation assures prospective employers that students come from a programme where the content and quality have been evaluated, satisfying established standards. It also signifies that the students passing out have acquired competence based on well established technical inputs.

Benefits to the Public

Accredited status represents the commitment of the programme and the Institution to quality and continuous improvement.

Catalyst for International Accreditations

Due to accreditation from NBA, the Institution's systems and procedures get aligned with the Institution's Mission and Vision. All essential prerequisites for international accreditation are included in the accreditation process of NBA. Therefore, NBA acts as a catalyst for the Institutions planning to acquire International Accreditation.

Benefits to Industry and Infrastructure Providers

It signifies identification of quality of Institutional capabilities, skills and knowledge.

Benefits to Parents

It signifies that their ward goes through a teaching-learning environment as per accepted good practices.

Benefits to Alumni

It reassures alumni that alumni are products of an institute with a higher standing in terms of learning.

Benefits to Country

Accreditation helps in gaining confidence of stakeholders and in giving a strong message that as a country, our technical manpower is of international standards and can be very useful in enhancing the global mobility for our technical manpower.

ENGINEERING ETHICS

Engineering Ethics is the set of rules and guidelines that engineers adhere to as a moral obligation to their profession and to the world. Engineering is a professional career that impact lives. When ethics is not followed, disaster often occurs; these disasters not only include huge monetary costs and environmental impacts, but also often result in the loss of human life. Engineering Ethics applies to every engineer and is very important.

The National Society of Professional Engineers (NSPE) decides the overall standards and codes of ethics for all the engineering professions. The Preamble of the NSPE *Code of Conduct for Engineers* (2007) states: "*Engineers shall at all times recognize that their primary obligation is to protect the safety, health, property, and welfare of the public. If their professional judgment is overruled under circumstances where the safety, health, property, or welfare of the public are endangered, they shall notify their employer or client and such other authority as may be appropriate.*"

Electrical Engineering Ethics

Electrical Engineering is a type of engineering profession that deals with the creation of better electronics. Since our society is heading towards an era of technology, where all members of society will be affected, it is especially important for electrical engineers to follow a code of engineering ethics. For electrical engineers, an important set of guidelines is the *Electrical Engineering Code of Ethics*, published by IEEE.

IEEE code of Ethics

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

1. to accept responsibility in making decisions consistent with the safety, health, and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding of technology; its appropriate application, and potential consequences;
6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;

7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons and to not engage in acts of discrimination based on race, religion, gender, disability, age, national origin, sexual orientation, gender identity, or gender expression;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

Engineering Ethics in College/Education

The main engineering ethics problem that college students are face with is academic integrity. Academic integrity can show itself in the form of cheating by copying someone's work, intentional cheating, plagiarism, and/or self-plagiarism.

However, professional ethics is something that can be learned even when it conflicts with personal ethics, as for example, a situation where you are personally okay with building a product that can harm the environment, yet save lives. You can learn professional ethics and realize that something that is harmful to the environment is not okay. Ethics codes can even help you see the bigger picture. For example, in the previous scenario, these codes can help you re-evaluate your ethics and realize that something that is harmful to the environment will eventually be harmful to the people around you and yourself.

Engineering Ethics in the Professional World

In the professional world, ethical engineering problems come up in many cases. One of these includes the case of a professional using someone else's work that is published in the widespread market of publication. Another is the case of a professional using someone else's work that is not published yet and stealing their idea. Engineers who have good engineering ethics often have a good sense of the value of life. They don't hesitate to admit that they made a mistake because they know that the cost of not owning up to your mistakes can have disastrous consequences. It might even cost a human life.

Engineering Ethics in Companies

Not only do individual engineers have to be conscious of engineering ethics, but also companies. Companies have to be aware of their Corporate Social Responsibility and Environmental Responsibility. Corporate Social Responsibility is a company's responsibility to give back to the community that they profit from and to behave ethically so that both they and their community can benefit. Environmental Responsibility is a business's initiative to leave the environment (where it is taking its resources from) the same, if not better, that it is found it.

BLOOM'S TAXONOMY

Definitions of the different levels of thinking skills in Bloom's taxonomy

1. **Remember** – recalling relevant terminology, specific facts, or different procedures related to information and/or course topics. At this level, a student can remember something, but may not really understand it.
2. **Understand** – the ability to grasp the meaning of information (facts, definitions, concepts, etc.) that has been presented.
3. **Apply** – being able to use previously learned information in different situations or in problem solving.
4. **Analyze** – the ability to break information down into its component parts. Analysis also refers to the process of examining information in order to make conclusions regarding cause and effect, interpreting motives, making inferences, or finding evidence to support statements/arguments.
5. **Evaluate** – being able to judge the value of information and/or sources of information based on personal values or opinions.
6. **Create** – the ability to creatively or uniquely apply prior knowledge and/or skills to produce new and original thoughts, ideas, processes, etc. At this level, students are involved in creating their own thoughts an ideas.

List of Action Words Related to Critical Thinking Skills

REMEMBER	UNDERSTAND	APPLY	ANALYZE	EVALUATE	CREATE
Count	Associate	Add	Analyze	Appraise	Categorize
Define	Compute	Apply	Arrange	Assess	Combine
Describe	Convert	Calculate	Breakdown	Compare	Compile
Draw	Defend	Change	Combine	Conclude	Compose
Identify	Discuss	Classify	Design	Contrast	Create
Label	Distinguish	Complete	Detect	Criticize	Drive
List	Estimate	Compute	Develop	Critique	Design
Match	Explain	Demonstrate	Diagram	Determine	Devise
Name	Extend	Discover	Differentiate	Grade	Explain
Outline	Extrapolate	Divide	Discriminate	Interpret	Generate
Point	Generalize	Examine	Illustrate	Judge	Group
Quote	Give	Graph	Infer	Justify	Integrate
Read	examples	Interpolate	Outline	Measure	Modify
Recall	Infer	Manipulate	Point out	Rank	Order
Recite	Paraphrase	Modify	Relate	Rate	Organize
Recognize	Predict	Operate	Select	Support	Plan
Record	Rewrite	Prepare	Separate	Test	Prescribe
Repeat	Summarize	Produce	Subdivide		Propose
Reproduce		Show	Utilize		Rearrange
Select		Solve			Reconstruct
State Write		Subtract			Related
		Translate			Reorganize
		Use			Revise
					Rewrite
					Summarize
					Transform
					Specify

K.L.N.COLLEGE OF ENGINEERING, POTTAPALAYAM - 630 612
ACADEMIC CALENDAR - EVEN Semester of 2017 – 2018 - Summary
IV, VI & VIII SEMESTER UG & IV&VI SEMESTER PG DEGREE COURSES

S.No.	Date (Day)	Programme / Events	*Day*
		DECEMBER 2017	
1	18.12.2017 (Monday)	Commencement of classes- IV,VI &VIII semester -B.E./B. Tech, IV,VI semester MCA, IV semester MBA,M.E Degree Courses	*01*
2	25.12.2017 (Monday)	Christmas Holiday	-
		JANUARY 2018	
3	01.01.2018(Monday)	NEW YEAR – HOLIDAY- FOUNDERS DAY	-
4	02.01.2018(Tuesday)	Commencement of AU Examinations-Theory- I semester – UG & PG	11
5	08.01.2018 (Monday)	Class Test – 1 (IV, VI & VIII semester UG & PG) (8^{th} – 13^{th} Jan 2018)	15
6	14.01.2018 (Sunday)	PONGAL - HOLIDAY	-
7	15.01.2018(Monday)	THIRUVALLUVAR THINAM- HOLIDAY	-
8	16.01.2018(Tuesday)	ULAVAR THIRUNAAL - HOLIDAY	-
9	22.01.2018 (Monday)	Commencement of Classes – II semester B.E/ B.Tech	24
10	26.01.2018(Friday)	REPUBLIC DAY - HOLIDAY	-
11	29.01.2018 (Monday)	Commencement of Classes – II semester M.E, MBA & MCA	29
12	31.01.2018 (Wednesday)	CIT -1 – IV, VI & VIII semester UG & PG -(31^{st} Jan – 7^{th} Feb 2018)	31
		FEBRUARY 2018	
13	14.02.2018 (Wednesday)	Group Photograph – Final Year students of UG &PG Degree courses with the Management, Principal, HODs, Directors and Members of Faculty	42
14	20.02.2018 (Tuesday)	Class Test – II -IV, VI & VIII semester UG & PG- (20^{th} – 26^{th} Feb 2018)	46
15	24.02.2018 (Saturday)	Parents – Teachers Meeting	50
		MARCH 2018	
16	02.03.2018 (Friday)	Annual Sports day - Tentative	55
17	10.03.2018 (Saturday)	CIT – II - IV, VI & VIII semester UG & PG -(10^{th} – 16^{th} March 2018)	61
18	16.03.2018 (Friday)	Payment of Anna University Examination Fees - Tentative	66
19	18.03.2018 (Sunday)	TELUGU NEW YEAR - HOLIDAY	-
20	22.03.2018 (Thursday)	Model Practical Examinations	70
21	24.03.2018(Saturday)	20th Graduation day- Tentative	72
22	26.03.2018 (Monday)	Students Feedback on Faculty – College Facility, Lab Faculty, Technical staff, Course Outcome survey	73
23	29.03.2018 (Thursday)	MAHAVIR JEYANTHI – HOLIDAY	-
24	30.03.2018(Friday)	GOOD FRIDAY – HOLIDAY	-
		APRIL 2018	
25	04.04.2018(Wednesday)	Class Test - III -IV, VI & VIII semester UG & PG - (4^{th} – 6^{th} April 2018)	78
26	06.04.2018 (Friday)	Graduate Exit Survey(Batch: 2014- 2018)	80
27	10.04.2018 (Tuesday)	Last working Day- IV , VI & VIII- Semester – B.E / B.Tech IV,VI semester MCA, IV semester MBA,M.E Degree Courses	82
28	12.04.2018 (Thursday)	Commencement of Practical Examinations IV,VI &VIII semester -B.E./B. Tech, IV,VI semester MCA,IV semester MBA,M.E Degree Courses	84
29	13.04.2018(Friday)	24^{th} College Annual Day – Tentative	85
30	14.04.2018 (Saturday)	TAMIL NEW YEAR - Dr. AMBETHKAR BIRTHDAY – HOLIDAY	-
31	23.04.2018 (Monday)	Commencement of Anna University Examinations IV,VI &VIII semester -B.E./B. Tech, IV,VI semester MCA MBA,M.E Degree Courses Summer Vacation – Phase I - (23.04.2018 –24.06.2018)	91
		MAY 2018	
32	01.05.2018 (Tuesday)	MAY DAY – HOLIDAY	-
33	02.05.2018 (Wednesday)	Collection of Alumni, Employer Feedback – Survey to be collected before 12^{th} May 2018	98
34	11.05.2018 (Friday)	International Conference on " Innovations in Engineering and Industrial Applications" - (11^{th} & 12^{th} May 2018)	105

Re-opening Day: III, V, VII Semester – B.E./B.Tech., : 02.07.2018(Monday)
Re-opening Day: III, V Semester – M.E ., M.B.A & M.C.A :02.07.2018(Monday)

K.L.N. College of Engineering, Pottapalayam – 630 612.
Department of Electrical and Electronics Engineering
CLASS WISE TIME TABLE -2017-2018 (EVEN)

Year/Sem/Sec : IV / VIII / A **Faculty In-charge : M.JEGADEESAN**

TIME→ DAY↓	**09.00 – 09.50**	**09.50 – 10.40**	**10.55- 11.45**	**11.45- 12.35**		**01.15- 02.05**	**02.05- 02.55**	**02.55-03.45 / 03.05-03.55**	**03.55- 04.45**
PERIOD→	**I**	**II**	**III**	**IV**		**V**	**VI**	**VII**	**VIII**
MON	**TQM** SVN	**PROJECT** MML	**PROJECT**– (PSS Lab-II) MGK		*L U N C H*	**TQM** SVN	**EEGUC** NVRV	**PERES** MJ	-
TUE	**PERES** MJ	**TQM** SVN	**EEGUC** NVRV	**PERES** MJ		**TQM** SVN	**PROJECT**– (PSS Lab-II) CVR(6), TG(7), KRJ(8)		
WED	**TQM** SVN	**PROJECT** MJ	**TQM** SVN	**EEGUC** NVRV/SPS		**PERES** MJ	**PROJECT**– (PSS Lab-II) NVRV(6), RSD(7,8)		
THU	**EEGUC** NVRV	**PERES** MJ	**EEGUC** NVRV	**PERES** MJ		**EEGUC** NVRV	**PROJECT**– (PSS Lab-II) KRJ(6), MML(7,8)		
FRI	**PROJECT**– (PSS Lab-II) MJ		**PROJECT**– (PSS Lab-II) SPS			**PROJECT**– (PSS Lab-II) JS(5), SVN(6,7)			-

Year/Sem/Sec : IV / VIII / B **Faculty In-charge : Dr.S.VENKATESAN**

TIME→ DAY↓	**09.00 – 09.50**	**09.50 – 10.40**	**10.55- 11.45**	**11.45- 12.35**		**01.15- 02.05**	**02.05- 02.55**	**02.55-03.45 / 03.05-03.55**	**03.55- 04.45**
PERIOD→	**I**	**II**	**III**	**IV**		**V**	**VI**	**VII**	**VIII**
MON	**TQM** AMJ	**PROJECT** MB	**PROJECT**– (PSS Lab-I) RD		*L U N C H*	**PERES** SV	**EEGUC** SPRR	**PERES** SV	-
TUE	**PERES** SV	**EEGUC** SPRR/SPS	**TQM** AMJ	**EEGUC** SPRR		**TQM** AMJ	**PROJECT**– (PE Lab) TG(6), RJPP(7,8)		
WED	**TQM** AMJ	**PROJECT** KRJ	**PROJECT**– (PSS Lab-II) SPRR			**PERES** SV	**EEGUC** SPRR	**PROJECT** SV	**EEGUC** SPRR
THU	**PERES** SV	**PROJECT** AMJ	**PROJECT**– (PSS Lab-II) TG(3), AMJ(4)			**EEGUC** SPRR	**TQM** AMJ	**PERES** SV	**TQM** AMJ
FRI	**PROJECT**– (EC Lab) SPS		**PROJECT**– (EC Lab) RSD			**PROJECT**– (EC Lab) SV(5), KRJ(6), MGK(7)			-

Year/Sem/Sec : IV / VIII / C **Faculty In-charge : N.VIMAL RADHA VIGNESH**

TIME→ DAY↓	**09.00 – 09.50**	**09.50 – 10.40**	**10.55- 11.45**	**11.45- 12.35**		**01.15- 02.05**	**02.05- 02.55**	**02.55-03.45 / 03.05-03.55**	**03.55- 04.45**
PERIOD→	**I**	**II**	**III**	**IV**		**V**	**VI**	**VII**	**VIII**
MON	**EEGUC** NVRV	**PERES** MJ	**TQM** AMJ	**EEGUC** NVRV/SPS	*L U N C H*	**PROJECT**– (PSS Lab-II) SRL(5), SM(6,7)			-
TUE	**TQM** AMJ	**PROJECT** RD	**PROJECT**– (PSS Lab-I) SM(3), RD(4)			**EEGUC** NVRV	**PERES** MJ	**EEGUC** NVRV	**TQM** AMJ
WED	**PERES** MJ	**EEGUC** NVRV	**TQM** AMJ	**PERES** MJ		**TQM** AMJ	**PROJECT**– (MPMC Lab) MJM(6), JS(7), NVRV(8)		
THU	**TQM** AMJ	**PROJECT** RSD	**PROJECT**– (PSS Lab-I) MB			**PERES** MJ	**PROJECT** NVRV	**PERES** MJ	**EEGUC** NVRV
FRI	**PROJECT**– (PSS Lab-I) NVRV		**PROJECT**– (PSS Lab-I) RJPP			**PROJECT**– (PSS Lab-I) SVN(5), SPS(6,7)			-

SUB CODE	**SUBJECT NAME**		**STAFF NAME**		
			Section - A	**Section - B**	**Section - C**
EE6801	Electric Energy Generation, Utilization and Conservation	EEGUC	N. Vimal Radha Vignesh / Dr.S. Parthasarathy	Dr.S.P.Rajaram / Dr.S.Parthasarathy	N.Vimal Radha Vignesh / Dr.S. Parthasarathy
EE6009	Power Electronics for Renewable Energy Systems (Elective IV)	PERES	M. Jegadeesan	Dr.S.Venkatesan	M. Jegadeesan
GE6757	Total Quality Management (Elective V)	TQM	Dr.S.Venkatanarayanan	A.Manoj	A.Manoj
EE6811	Project Work	PROJECT	M. Jegadeesan	Dr.S.Venkatesan	N.Vimal Radha Vignesh

ANNA UNIVERSITY, CHENNAI
AFFILIATED INSTITUTIONS
R - 2013
B. E. ELECTRICAL AND ELECTRONICS ENGINEERING
VIII SEMESTERS CURRICULUM AND SYLLABUS

S.NO.	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	EE6801	Electric Energy Generation, Utilization and Conservation	3	0	0	3
2.	EE6009	Power Electronics for Renewable Energy Systems	3	0	0	3
3.	GE6757	Total Quality Management	3	0	0	3
PRACTICAL						
4.	EE6811	Project Work	0	0	12	6
TOTAL			**9**	**0**	12	15

EE6801 ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

OBJECTIVES:

- To analyze the various concepts behind renewable energy resources.
- To introduce the energy saving concept by different ways of illumination.
- To understand the different methods of electric heating and electric welding.
- To introduce knowledge on Solar Radiation and Solar Energy Collectors
- To introduce concepts of Wind Energy and its utilization

UNIT I ELECTRIC DRIVES AND TRACTION 9

Fundamentals of electric drive - choice of an electric motor - application of motors for particular services - traction motors - characteristic features of traction motor - systems of railway electrification - electric braking - train movement and energy consumption - traction motor control - track equipment and collection gear.

UNIT II ILLUMINATION 9

Introduction - definition and meaning of terms used in illumination engineering - classification of light sources - incandescent lamps, sodium vapour lamps, mercury vapour lamps, fluorescent lamps – design of illumination systems - indoor lighting schemes - factory lighting halls - outdoor lighting schemes - flood lighting - street lighting - energy saving lamps, LED.

UNIT III HEATING AND WELDING 9

Introduction - advantages of electric heating – modes of heat transfer - methods of electric heating - resistance heating - arc furnaces - induction heating - dielectric heating - electric welding – types - resistance welding - arc welding - power supply for arc welding - radiation welding.

UNIT IV SOLAR RADIATION AND SOLAR ENERGY COLLECTORS 9

Introduction - solar constant - solar radiation at the Earth's surface - solar radiation geometry – estimation of average solar radiation - physical principles of the conversion of solar radiation into heat – flat-plate collectors - transmissivity of cover system - energy balance equation and collector efficiency - concentrating collector - advantages and disadvantages of concentrating collectors - performance analysis of a cylindrical - parabolic concentrating collector – Feedin Invertors.

UNIT V WIND ENERGY 9

Introduction - basic principles of wind energy conversion - site selection considerations - basic components of a WECS (Wind Energy Conversion System) - Classification of WECS - types of wind Turbines - analysis of aerodynamic forces acting on the blade - performances of wind.

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to understand and analyze power system operation, stability, control and protection.
- Ability to handle the engineering aspects of electrical energy generation and utilization.

TEXT BOOKS:

1. N.V. Suryanarayana, "Utilisation of Electric Power", Wiley Eastern Limited, New Age International Limited,1993.
2. J.B.Gupta, "Utilisation Electric power and Electric Traction", S.K.Kataria and Sons, 2000.
3. G.D.Rai, "Non-Conventional Energy Sources", Khanna Publications Ltd., New Delhi, 1997.

REFERENCES:

1. R.K.Rajput, Utilisation of Electric Power, Laxmi publications Private Limited.,2007.

2. H.Partab, Art and Science of Utilisation of Electrical Energy", Dhanpat Rai and Co., New Delhi, 2004.
3. C.L.Wadhwa, "Generation, Distribution and Utilisation of Electrical Energy", New Age International Pvt.Ltd., 2003.
4. S. Sivanagaraju, M. Balasubba Reddy, D. Srilatha,' Generation and Utilization of Electrical Energy', Pearson Education, 2010.
5. Donals L. Steeby,' Alternative Energy Sources and Systems', Cengage Learning, 2012.

EE6009 POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS

OBJECTIVES:

- To Provide knowledge about the stand alone and grid connected renewable energy systems.
- To equip with required skills to derive the criteria for the design of power converters for renewable energy applications.
- To analyse and comprehend the various operating modes of wind electrical generators and solar energy systems.
- To design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems.
- To develop maximum power point tracking algorithms.

UNIT I INTRODUCTION 9

Environmental aspects of electric energy conversion: impacts of renewable energy generation on environment (cost-GHG Emission) - Qualitative study of different renewable energy resources: Solar, wind, ocean, Biomass, Fuel cell, Hydrogen energy systems and hybrid renewable energy systems.

UNIT II ELECTRICAL MACHINES FOR RENEWABLE ENERGY CONVERSION 9

Reference theory fundamentals-principle of operation and analysis: IG, PMSG, SCIG and DFIG.

UNIT III POWER CONVERTERS 9

Solar: Block diagram of solar photo voltaic system -Principle of operation: line commutated converters (inversion-mode) - Boost and buck-boost converters- selection of inverter, battery sizing, array sizing Wind: Three phase AC voltage controllers- AC-DC-AC converters: uncontrolled rectifiers, PWM Inverters, Grid Interactive Inverters-matrix converters.

UNIT IV ANALYSIS OF WIND AND PV SYSTEMS 9

Stand alone operation of fixed and variable speed wind energy conversion systems and solar system- Grid connection Issues -Grid integrated PMSG, SCIG Based WECS, grid Integrated solar system

UNIT V HYBRID RENEWABLE ENERGY SYSTEMS 9

Need for Hybrid Systems- Range and type of Hybrid systems- Case studies of Wind-PV Maximum Power Point Tracking (MPPT).

TOTAL : 45 PERIODS

OUTCOMES:

- Ability to understand and analyze power system operation, stability, control and protection.
- Ability to handle the engineering aspects of electrical energy generation and utilization.

TEXT BOOK:

1. S. N. Bhadra, D.Kastha, S.Banerjee, "Wind Electrical Systems", Oxford University Press, 2005.
2. B.H.Khan Non-conventional Energy sources Tata McGraw-hill Publishing Company, New Delhi,2009.

REFERENCES:

1. Rashid .M. H "power electronics Hand book", Academic press, 2001.
2. Ion Boldea, "Variable speed generators", Taylor & Francis group, 2006.
3. Rai. G.D, "Non conventional energy sources", Khanna publishes, 1993.
4. Gray, L. Johnson, "Wind energy system", prentice hall linc, 1995.
5. Andrzej M. Trzynnadlowski, 'Introduction to Modern Power Electronics', Second edition, wiley India Pvt. Ltd, 2012.

GE6757 TOTAL QUALITY MANAGEMENT L T P C

3 0 0 3

OBJECTIVES:

- To facilitate the understanding of Quality Management principles and process.

UNIT I INTRODUCTION 9

Introduction - Need for quality - Evolution of quality - Definitions of quality - Dimensions of product and service quality - Basic concepts of TQM - TQM Framework - Contributions of Deming, Juran and Crosby - Barriers to TQM - Quality statements - Customer focus - Customer orientation, Customer satisfaction, Customer complaints, Customer retention - Costs of quality.

UNIT II TQM PRINCIPLES 9

Leadership - Strategic quality planning, Quality Councils - Employee involvement - Motivation, Empowerment, Team and Teamwork, Quality circles Recognition and Reward, Performance appraisal - Continuous process improvement - PDCA cycle, 5S, Kaizen - Supplier partnership - Partnering, Supplier selection, Supplier Rating.

UNIT III TQM TOOLS AND TECHNIQUES I 9

The seven traditional tools of quality - New management tools - Six sigma: Concepts, Methodology, applications to manufacturing, service sector including IT - Bench marking - Reason to bench mark, Bench marking process - FMEA - Stages, Types.

UNIT IV TQM TOOLS AND TECHNIQUES II 9

Control Charts - Process Capability - Concepts of Six Sigma - Quality Function Development (QFD) - Taguchi quality loss function - TPM - Concepts, improvement needs - Performance measures.

UNIT V QUALITY SYSTEMS 9

Need for ISO 9000 - ISO 9001-2008 Quality System - Elements, Documentation, Quality Auditing - QS 9000 - ISO 14000 - Concepts, Requirements and Benefits - TQM Implementation in manufacturing and service sectors.

TOTAL: 45 PERIODS

OUTCOMES:

- The student would be able to apply the tools and techniques of quality management to manufacturing and services processes.

TEXT BOOK:

1. Dale H. Besterfiled, et at., "Total quality Management", Pearson Education Asia, Third Edition, Indian Reprint, 2006.

REFERENCES:

1. James R. Evans and William M. Lindsay, "The Management and Control of Quality", 8th Edition, First Indian Edition, Cengage Learning, 2012.
2. Suganthi.L and Anand Samuel, "Total Quality Management", Prentice Hall (India) Pvt. Ltd., 2006.
3. Janakiraman. B and Gopal .R.K., "Total Quality Management - Text and Cases", Prentice Hall (India) Pvt. Ltd., 2006.

EE6811 PROJECT WORK L T P C
0 0 12 6

OBJECTIVES:

- To develop the ability to solve a specific problem right from its identification and literature review till the successful solution of the same. To train the students in preparing project reports and to face reviews and viva voce examination.

The students in a group of 3 to 4 works on a topic approved by the head of the department under the guidance of a faculty member and prepares a comprehensive project report after completing the work to the satisfaction of the supervisor. The progress of the project is evaluated based on a minimum of three reviews. The review committee may be constituted by the Head of the Department. A project report is required at the end of the semester. The project work is evaluated based on oral presentation and the project report jointly by external and internal examiners constituted by the Head of the Department.

TOTAL: 180 PERIODS

OUTCOMES:

- On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.

K.L.N. COLLEGE OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
LECTURE SCHEDULE

Format No.:11
Issue No.: 02
Revision No.: 01
Date: 23/06/12

Degree/Program: **B.E / EEE**
Course code &Name: **EE6801-ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION**
Duration: **Dec'17 -Apr 2018** Semester: **VIII** Regulation: **2013/AUC**

AIM

To expose students to the main aspects of generation, utilization and conservation.

OBJECTIVE:

To impart knowledge on

- To analyze the various concepts behind renewable energy resources.
- To introduce the energy saving concept by different ways of illumination.
- To understand the different methods of electric heating and electric welding.
- To introduce knowledge on Solar Radiation and Solar Energy Collectors.
- To introduce concepts of Wind Energy and its utilization.

COURSE OUTCOMES: After the course, the student should be able to:

CO	Course Outcomes	POs	PSO
C409.1	Evaluate tractive effort for the propulsion of train, name the traction motors, list the traction motor control, track equipment and collection gear.	1,2,3,6,7	1,3
C409.2	Categorize different light sources and design various illumination systems for the indoor lighting schemes, factory lighting, halls, outdoor lighting schemes, flood lighting, street lighting.	1,2,3,6,7	1,3
C409.3	Compare the different methods of electric heating and types of electric welding.	1,2,3,6,7	1,3
C409.4	Estimate average solar radiation and illustrate the physical principles of the conversion of solar radiation into heat.	1,2,3,6,7,11	1,3
C409.5	Analyze aerodynamic forces acting on the blade and draw basic components of a WECS.	1,2,3,6,7,11	1,3

S. No	Date	Period Number	Topics to be covered	Book No [Page No]
UNIT-I			**ELECTRIC DRIVES AND TRACTION**	**Target Periods: 9**
1			Fundamentals of electrical drive and choice of an electric motor	R3 [356-358]
2			Application of motor for particular services	R3 414
3			Traction motor, Characteristic features of traction motor	R3 [379-384]
4				
5			Systems of railway electrification	R3 [357-362]
6			Electric Breaking	R3 [422-428]
7			Train movement and energy consumption	R3 [365-372]
8			Traction motor control	R3 [390-402]
9				
10			Track equipment and collection gear	R3 [412-414]
Total Periods:		**10**	***Assignment-I*** ***Test-I***	
UNIT II			**ILLUMINATION**	**Target Periods: 9**
11			Definition and terms used in illumination engineering	R3 [315-318]
12			Classification of light sources	R3 338
13			Incandescent lamps, sodium vapour lamps	R3 [338-342]
14			Mercury vapour lamps, fluorescent lamps	R3 [338-342]
15			Design of illumination systems	R3[337-338]
16			Indoor lighting scheme, Factory lighting halls	Notes
17			Outdoor lighting scheme, Flood lighting and street lighting	R3 [343-345]
18				
19			Energy saving lamps, LED	Notes
20				
			Assignment –II ***CIT-I***	
UNIT III			**HEATING AND WELDING**	**Target Periods: 9**
21			Introduction and Advantages of electric heating	R3 [279-280]
22			Modes of heat transfer	Notes
23			Methods of electric heating	R3 [280-281]

24			Resistance heating, Arc furnaces	R3 [283-286]
25			Induction heating, Dielectric heating	R3 [289-299]
26			Electric welding and types	R3 [301-302]
27			Resistance welding, Arc welding	R3 [302-308]
28			Power supply for arc welding	**Notes**
29			Radiation welding	Notes
Total Periods:		**09**	***Assignment-III***	***Test-3***
UNIT IV			**SOLAR RADIATION AND SOLAR ENERGY COLLECTORS**	**Target Periods: 9**
30			Introduction, Solar constant and Solar radiation in earth surface	T3 [43-53]
31			Solar radiation geometry, Estimation of average solar radiation	T3 [53-60]
32			Physical principles of the conversion of solar radiation into heat	T3[66-71]
33			Flat-plate collectors, Transmissivity of cover system, Energy balance equation and collector efficiency	T3 [73-76]
34				T3 [76-94]
35			Concentrating collector, Advantages and disadvantages of concentrating collector	
36				T3 [102-112]
37			Performance analysis of a cylindrical and parabolic concentrating collector, Feeding invertors	
38				T3 [112-120]
39			***Content beyond syllabus***	
40			***Seminar-1***	
Total Periods:		**11**	***CIT-II***	
UNIT V			**WIND ENERGY**	**Target Periods: 9**
41			Introduction	T3 [227-230]
42			Basic principles of wind energy conversion	T3 [230-245]
43			Site selection considerations	T3 [252-255]
44			Basic components of WECS	T3 [256-260]
45				T3 [260-262]
46			Classification of WECS, Types of wind turbine	T3 [262-285]
47				T3 [285-287]
48			Analysis of aerodynamic force acting on the blade	
49			Performance of the wind	T3 [287-292]
50			***Quiz-1***	
Total Periods:		**10**	***CIT-III***	

Books: Text/Reference Book

S. No		**Title of the Book**	**Author**	**Publisher**	**Year**
1	**T1**	Utilisation of Electric Power	Suryanarayana N.V	Wiley Eastern Limited, New age International limited	1993
2	**T2**	Utilization of Electric Power and Electric Traction	Gupta.J.B	S.K.Kataria and Sons	2000
3	**T3**	Non-Conventional Energy Sources	G.D. Rai	Khanna Publication Limited	1997
4	**R1**	Utilization of Electric Power	R.K.Rajput	Laxmi Publication Private Limited	2007
5	**R2**	Art and Science of Utilization of Electrical Energy	Partab, H.	Dhanpat Rai and Co	2004
6	**R3**	Generation, Distribution and Utilization of Electrical Energy.	Wadhwa, C.L.	New Age International Pvt. Ltd	2003
7	**R4**	Generation and Utilization of Electrical Energy	S.Sivanagaraju, M.Balasubba Reddy and D.Srilatha	Pearson Education	2010
8	**R5**	Alternative energy sources and systems	Donals L.Steeby	Cengage learning	2012

STAFF INCHARGE **HOD/EEE**

Format No.:11
Issue No.: 02
Revision No.: 01
Date: 23/06/12

K.L.N. COLLEGE OF ENGINEERING, POTTAPALAYAM - 630 612

Lecture Schedule

Course/Branch : **B.E / EEE** Subject: **POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS**
Duration: **DEC'2017-Apr'2018** Subject Code: **EE6009** Semester: **VIII** Section**:**
Regulation: **2013** Staff Handling:

AIM

To understand the significance of power electronic converters to harness the energy from the various types of renewable energy sources.

OBJECTIVES

1. To provide knowledge about the stand alone and grid connected renewable energy systems.
2. To equip with required skills to derive the criteria for the design of power converters for renewable energy applications.
3. To analyze and comprehend the various operating modes of wind electrical generators and solar energy systems.
4. To design different power converters namely AC to DC, DC to DC and AC to AC converters for renewable energy systems.
5. To develop maximum power point tracking algorithms.

Prerequisites: Power Electronics and Electrical Machines

COURSE OUTCOMES: After the course, the student should be able to:

Course	Course Outcome	Pos	PSOs
C410E1.1	Discuss and analyze the various types of renewable energy sources	**1,2,6,7,8**	**1,2,3**
C410E1.2	Analyze the performance of IG,PMSG,SCIG AND DFIG		**1,2,3**
C410E1.3	Design different power converters namely AC to DC,DC to DC and Ac to AC converters for renewable energy sources		**1,2,3**
C410E1.4	Analyze various operating modes of wind electrical generators and solar energy systems		**1,2,3**
C410E1.5	Develop maximum power point tracking algorithms		**1,2,3**

S.No	Date	Period Number	Topics to be Covered	Book No [Page No]
UNIT I: INTRODUCTIONS				**Target Periods : 9**
1			Environment aspects of electric energy conversion-Impacts of renewable generation on environment (cost – GHG Emission)	Material
2			Qualitative study of different renewable energy resources: Ocean Energy	2(495-558) 3(311-331)
3			Biomass Energy	2(311435) 3(243-277)
4			Hydrogen energy systems	2(609-657) 3(379-389)
5			Operating principles and characteristics of: solar PV	2(73-238) 3(82-188)
6			Wind Energy	2(227-310) 3(196-236)
7			Fuel cell Energy	2(227-310) 3(196-236)
8			Hybrid renewable systems	material
UNIT II: ELECTRICAL MACHINES FOR RENEWANLE ENERGY CONVERSION				**Target Periods : 9**
9.			Reference theory Fundamentals	Material
10			Principle of operation of IG	1(74-97)
11			Analysis of IG	5(5.27-5.47)
12			Principles of operation of PMSG	1(111-117)
13			Analysis of PMSG	5(5.15-5.26) 5(6.11-6.17)
14			Principles of operation of SCIG	5(6.20-6.36)
15			Analysis of SCIG	Material)
16			Principles of operation of DFIG	Material
17			Analysis of DFIG	
UNIT III : POWER CONVERTERS				**Target period:9**
18			Solar : Block diagram of solar photo voltaic system, Principle of	4(667-670)

			operation	
19			Line commutated converters(inversion – mode),	1(145-151) 4(201-220)
20			Boost and buck-boost converters	1(151-157) 4(245-261)
21			Selection of inverter , battery sizing, array sizing	4(680)
22			Wind: three phase AC voltage controllers	4(483-516)
23			AC-DC-AC converters	4(150-155)
24			Uncontrolled rectifiers	
25			PWM inverters	4(353-400)
26			5,7	Material
27			1	
UNIT IV : ANALISIS OF WIND AND PV SYSTEMS				**Target period:9**
28			Stand alone operation of fixed speed and variable speed wind energy conversion systems	4(704-710)
29			Stand alone operation of solar system	4(677-678)
30			Grid Connection Issues	4(706)
31			Grid integrated operation of variable speed wind energy conversion systems	4(705-710)
32			Grid integrated PSMG Based WECS	4(711-712)
33			Grid integrated SCIG Based WECS	4(713-715)
34			Grid integrated operation of solar systems	4(689-690)
35			**Seminar-2**	
36			**Content beyond syllabus: Technical advances in Renewable Energy**	
UNIT V : HYBRID RENEWABLE ENERGY SYSTEMS				**Target period:9**
37			Need for Hybrid Systems	4(685-686)
38			Range and type of Hybrid Systems	4(687-689)
39			Case studies of wind	Material
40			PV Maximum Power Point Tracking(MPPT)	4(663-679)
41			**Quiz**	
CIT –3 (04.04.2018 & 06.04.2018)				

Books: Text/Reference

S. No	Title of the Book	Author	Publisher	Year
1.	Wind Electrical Systems	S.N.Bhadra, D.Kastha , S.Banerjee	Oxford University Press	2005
2	Non conventional energy sources	Rai. G.D	Khanna publishes	1993
3	Non-conventional Energy sources	B.H.Khan	Tata McGraw-hill Publishing Company, New Delhi.	1995
4	Power electronics Hand book	Rashid .M. H	Academic press	2001
5	Wind energy system	Gray, L. Johnson	prentice hall linc,	1995
6	Variable speed generators	Ion boldea	Taylor&Francis group	2006

Format No.:11
Issue No.: 02
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Date: 23/06/12

K.L.N. COLLEGE OF ENGINEERING, POTTAPALAYAM - 630 612

Lecture Schedule

Degree/Program: **B.E / EEE.** Course code &Name: GE6757 –Total Quality Management

Duration: **Jan -April 2018.** Semester: VIII Regulation : **2013.**

AIM: To facilitate the understanding of Quality Management principles and process.

OBJECTIVES

Outcomes: The student would be able to apply the tools and techniques of quality management to manufacturing and services processes.

Prerequisites: Not defined and not required as this is the basic course.

COURSE OUTCOMES: After the course, the student should be able to:

		POs	PSOs
C411E2.1	To understand the meaning of quality, TQM, vision, mission and policy statements through contributions of quality gurus.	**4,6, 7,8, 9, 10 11, 12**	**1 1 1 1 1**
C411E2.2	To understand leadership on quality management, importance of employee involvement, basic idea of continuous process improvement and to analyze TQM using PDSA, 5S and QC.		
C411E2.3	To apply seven statistical tools and new seven statistical tools on TQM, set benchmarks on TQM, understand and implement FEMA		
C411E2.4	To understand and apply control charts, six sigma principles, QFD, Taguchi's Quality loss principle and TPM on TQM.		
C411E2.5	To understand the quality systems such as ISO 9000 and ISO 14000, and to implement TQM in manufacturing and service sectors.		

S.No	Date	Period Number	Topics to be Covered	Book No [Page No]
UNIT I - INTRODUCTION			**Target Periods : 9**	
1			Introduction - Need for quality	T1[1.1,1.6,1.18]
2			Evolution of quality - Definitions of quality	T1[1.4]
3			Dimensions of product and service quality - Basic concepts of TQM	T1[1.10]
4			TQM Framework	T1[1.21]
5			Contributions of Deming, Juran and Crosby	T1[1.25-1.33]
6			Barriers to TQM, Quality statements	TA[1.24]
7			Customer focus - Customer orientation, Customer satisfaction,	T1[2.1-2.7]
8			Customer complaints, Customer retention	T1[2.0-2.18]
9			Costs of quality	
10			REVISION	
			Class Test –I: 10.2.18	
Assignment - 1			Date of Announcement: 26.12.17	Date Of Submission: 2.1.18
UNIT II	TQM PRINCIPLES			**Target Periods : 9**
11			Leadership	T1[3.1-3.11]
12			Strategic quality planning, Quality Councils	T1[3.12-3.14]
13			Employee involvement - Motivation, Empowerment, Team and Teamwork	T1[4.1-4.18]
14			Quality circles Recognition and Reward, Performance appraisal	T1[4.1-4.18]
15			Continuous process improvement	TA[5.1-5.8]
16			PDCA cycle, 5S, Kaizen	T1[5.8-5.21]
17			Supplier partnership - Partnering,	T1[6.1-6.11]
18			Supplier selection, Supplier Rating	T1[6.1-6.11]
			CIT – I: 2.2.18	
Assignment 2			Date of Announcement : 15.1.18	Date Of Submission : 22.1.18
UNIT III	TQM TOOLS AND TECHNIQUES I			**Target Periods : 9**
21			The seven traditional tools of quality	T1[8.1-8.25]
22			New management tools - Six sigma: Concepts, Methodology, applications to manufacturing, service	T1[9.1-9.21]
23				T1[9.1-9.21]

24			sector including IT	T1[9.1-9.21]
25				T1[9.1-9.21]
26				T1[9.1-9.21]
27			Bench marking	T1[10.1-10.12]
28			Reason to bench mark, Bench marking process	T1[10.1-10.12]
29			FMEA - Stages, Types	T1[11.1-11.11]
30			Revision	
Class Test –II : 22.2.18				
Assignment – 3			Date of Announcement: 12.2.18	Date Of Submission : 19.2.18
UNIT IV TQM TOOLS AND TECHNIQUES II				**Target Periods : 9**
33			Control Charts	T1[12.1-12.28]
34			Process Capability	T1[12.37-12.70]
35			Concepts of Six Sigma	T1[13.1-13.12]
36			Quality Function Development (QFD)	T1[14.1-14.15]
37			Taguchi quality loss function	T1[15.1-15.9]
38			TPM - Concepts	T1[16.1-16.10]
39			improvement needs	T1[16.1-16.10]
40			Performance measures	T1[17.1-17.11]
CIT II: **13.3.17**				
UNIT V QUALITY SYSTEMS				**Target Periods : 9**
45			Need for ISO 9000 - ISO 9001-2008 Quality System	T1[18.1-18.27]
46			Elements, Documentation	T1[18.30-18.37]
47			Quality Auditing -	TA[18.32]
48			QS 9000, ISO 14000 - Concepts	T1[19.1-19.20]
49			Requirements and Benefits	T1[19.1-19.20]
50			TQM Implementation in manufacturing and service sectors.	T1[20.1-20.10]
51			REVISION	
52				
Class test 3: 6.4.18				

Tex/Ref	Title of the Book	Author	Publisher/Edition
T.1	Total Quality Management	Dr.V.Jayakumar,Dr.R.Raju	Lakshmi Publications
T.2	Total Quality Management	Dale H. Besterfiled	Pearson Education
R.1	James R. Evans and William M. Lindsay	James R. Evans anWilliam M. Lindsay	First Indian Edition, Cengage Learning
R.2	Total Quality Management	Suganthi.L and Anand Samuel	Prentice Hall (India)
R.3	Total Quality Management - Text and Cases	Janakiraman. B and Gopal .R.K.	Prentice Hall (India) Pvt. Ltd

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C411E2.1	-	-	-	1	-	1	1	2	1	1	2	3	1	1	1
C411E2.2	-	-	-	1	-	1	1	2	1	1	2	3	1	1	1
C411E2.3	-	-	-	1	-	1	1	2	1	1	2	3	1	1	1
C411E2.4	-	-	-	1	-	1	1	2	1	1	2	3	1	1	1
C411E2.5	-	-	-	1	-	1	1	2	1	1	2	3	1	1	1
C411E2	-	-	-	**1**	-	**1**	**1**	**2**	**1**	**1**	**2**	**3**	**1**	**1**	**1**

Content Beyond Syllabus Added(CBS)	POs strengthened / vacant filled	CO / Unit
Application of TQM in Engineering	PO6 (2)(Strengthened)	C411E2.5 / V

Staff in charge **HOD/EEE**

K.L.N. College of Engineering

Department of Electrical and Electronics Engineering

EE6801-ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION (C409)

Important Questions/Tutorials/Assignments/Self-study /Seminar topics.

1. Course outcomes

Course	Course outcomes	POs
C409.1	List the traction motor control, track equipment and collection gear also evaluate tractive effort for the propulsion of train.	1,2,3,6,7
C409.2	Categorize different light sources and design various illumination systems for the indoor lighting schemes, factory lighting, halls, outdoor lighting schemes, flood lighting, street lighting.	1,2,3,6,7
C409.3	Compare the different methods of electric heating and types of electric welding.	1,2,3,6,7
C409.4	Estimate average solar radiation and illustrate the physical principles of the conversion of solar radiation into heat.	1,2,3,6,7,11
C409.5	Analyze aerodynamic forces acting on the blade and draw basic components of a WECS.	1,2,3,6,7,11

2. Mapping of Course Outcomes (COs), Course (C), Program Specific Outcomes (PSOs) with Program Outcomes. (POs) – Before CBS [Levels of correlation: 3(High), 2(Medium), 1(low)].

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C409.1	3	2	2	-	-	1	1	-	-	-	-	-	2	-	1
C409.2	3	2	2	-	-	1	1	-	-	-	-	-	2	-	1
C409.3	3	2	2	--	-	1	1	-	-	-	-	-	2	-	1
C409.4	3	2	2	-	-	1	1	-	-	-	2	-	2	-	1
C409.5	3	2	2	-	-	1	1	-	-	-	1	-	2	-	1
C409	3	2	2	-	-	1	1	-	-	-	1	-	2	-	1

3. PROGRAM OUTCOMES (POs)

Electrical and Electronics Engineering Graduates will be able to:

PO1: Engineering knowledge:

Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis:

Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions:

Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO6: The engineer and society:

Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability:

Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO11: Project management and finance:

Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

S.No	**4. Important Questions.**	COs	POs
Q.1.1.	What are the various types of electric braking used in traction? Discuss in detail	C409.1	1,2,3
Q.1.2.	What is the speed controls of different system of motors used in electric train?	C409.1	1,2,3
Q.1.3.	Write about mechanics of train movement	C409.1	1,6
Q.1.4.	State the principle of regenerative braking. Explain regenerative braking in respect of a) DC motors, b) Induction motors.	C409.1	1,7
Q.1.5.	Derive an expression for tractive effort required to run an electric locomotive.	C409.1	1,2,3
Q.2.1.	Explain the method of working of a Neon lamp with a neat sketch.	C409.2	1,2,3
Q2.2.	Estimate the number and wattage of lamps which would be required to illuminate ever shop space 60 X 15metres, by means of lamps mounted 5metres above the working plane. The average illumination required is about 100 Flux, Co-efficient of utilization = 0.4, luminous efficiency is 16 lumens per Watt. Assume a space height ratio of unity candle power depreciation of 20%	C409.2	1,2,3
Q.2.3.	Two lamps one 200cp and another 500cp are hung at a height of 10metres and 25metres respectively. The horizontal distance between the poles is 80metres. Determine the illumination at the mid-point between the poles on the ground. What is the requirement of good heating materials?	C409.2	1,2,3
Q2.4.	Explain the working of a sodium vapour lamp with in a neat sketch.	C409.2	1
Q.2.5.	Explain the types of lamps and lighting fitments you should select for (i)A large machine shop with rows of drilling machines (ii) A drawing office and lathes.	C409.2	1,6,7
Q.2.6.	A lamp of 300 candle power is placed 1.5 m below a reflecting plane mirror surface, which reflects 70% of the light falling on it. Find the illumination at a point 4m.	C409.2	1,2,3
Q2.7.	Explain the principle of street lighting? Show different types of lighting with neat Sketches.	C409.2	1
Q.3.1.	Explain the various types of resistance heating.	C409.3	1
Q.3.2.	Explain the construction and working principle of dielectric heating. Calculate the energy required to melt one metric ton of brass in a single – phase Induction furnace. If the time taken is 1.5 hour, find the power input to the furnace. Specific heat of brass = 0.094 Latent heat of fusion of brass = 38 kcal / kg Melting point of brass = 920º C Furnace efficiency = 80%, Temperature of charge = 20º C	C409.3	1,2,3
Q.3.3.	With the help of neat diagrams explain in detail the various methods of resistance welding	C409.3	1,6,11
Q.3.4.	Discuss with neat diagram different types of arc welding methods	C409.3	1,6,11
Q.3.5.	Explain the working of core type induction furnace with a neat sketch.	C409.3	1
Q.3.6.	A 5KW, 440volts, 3 phase resistance oven is to have a 3star connected nichrome strip of 0.3mm thick heating element. If the wire temperature is to be 1500°c and that of the charge 1000°c, estimate the suitable width of the strip. Resistively of nichrome alloy is 1.016 X 10-6. Assume the radiating efficiency and emissivity of the element as 0.6 and 0.91 respectively.	C409.3	1,2,3
Q.4.1.	What are solar collectors? Give their classification and compare them based on construction and area of application.	C409.4	1,2,3
Q.4.2.	With neat sketches, discuss important part of the any flat plate solar collector.	C409.4	1,2,3
Q.4.3.	Explain the basic phenomenon of solar energy conversion with suitable diagram	C409.4	1,2,7
Q.4.4.	Derive the energy balance equation and collector efficiency for different types of collector.	C409.4	1,2,6

Q.4.5.	With the help of neat diagrams explain in detail about different types of concentrate plate collector.	C409.4	1,2,11
Q.4.6.	Write the comparison of different types of solar collectors.	C409.4	1,2,3
Q.5.1.	With a neat diagram explain wind electric power generating system also lists its merits and demerits.	C409.5	1,2,6
Q5.2.	List out the factors consideration for wind power plant site selection.	C409.5	1,2,3
Q.5.3.	With a neat block diagram, explain the basic function different components of WECS.	C409.5	1,2,11
Q.5.4.	With the help of neat diagrams explain in detail about the construction and the working principle of different wind turbines.	C409.5	1,2,3
Q.5.5.	Describe the analysis of aerodynamic force acting on the wind blades and Estimate the wind performance.	C409.5	1,2,7
	5.Assignments		
A.1.1.	The distance between the two stations is 1.6 kms and the average speed of the train is 40kmph, the acceleration, retardation during coasting and braking are 2km/h/s, 0.16kmphps and 3.2 km/h/s respectively. Assume quadrilateral approximation of the speed time curve; determine the duration of the acceleration, coasting and braking periods and distance covered during these periods.	C409.1	1,2,3
A.1.2	An electric train weighting 400 tonnes running along an up gradient of 1% with following speed time curve: (i)uniform acceleration of 1.5 km/h/s for 30 sec (ii) free running for 36 sec (iii)coasting for 25 sec (iv) braking at 2.6 km/h/s to rest. If tractive resistance is 45N/tonne, rotational inertia effect 10%, overall efficiency of the transmission and motor is 75%. Determine the specific energy consumption	C409.1	1,2,3
A.1.3	Discuss the various methods of speed control of industrial drives. Write typical examples for each drive.	C409.1	1,2,3
A.2.1	A 200 c.p lamp is hung 4 m above the Centre of a circular area of 5 m diameter. Determine the illumination at the (i) Centre of the area (ii) Periphery of the area (iii) Average illumination if reflector of 80% efficiency is used.	C409.2	1,2,3,6
A.2.2	An illumination on the working plane of 32 lux is required in a room 80mx15m. The lamps are required to be hung 4.5m above the work bench. Assume a COU of 0.5, lamp efficacy of 14 lumens per watt and COD of 0.2. Estimate the number rating and disposition of the lamps. Assume suitable value of space ratio.	C409.2	1,2,3
A.2.3	Explain the various factors to be taken into account for designing street lighting and flood Lighting.	C409.2	1,2,3,6
A.3.1.	Determine the efficiency of a induction furnace which takes 10 minutes to melt 1.815Kg of aluminium to the furnace being 5KW and the initial temperature 15 degree centigrade. Specific heat of aluminium: 0.212 K Cal/Kg^{0}C Melting point: 660 degrees centigrade. Latent heat of fusion of aluminium = 76.8 K Cal/Kg	C409.3	1,2,3
A.3.2.	The power required for dielectric heating of a slap of resin 150 sq.cm in area and 2 cm thick is 200W at frequency of 30MHz. The material has relative permittivity of 5 and a p.f 0.05. determine the voltage necessary and current flowing through the material. If the voltage is limited to 600V, what will be the value of the frequency to obtain the same heating?	C409.3	1,2,3,6
A3.3	Compare the performance of various electrodes used in electric arc furnaces.	C409.3	1,2,3
	6. Seminar topics		
S4.1	Overview of Solar energy	C409.4	1,2
S4.2	Solar cell	C409.4	1,2

S4.3	Types of solar cell	C409.4	1,2,6
S4.4	Solar water heating	C409.4	1,2
S4.5	Photo-Voltaic power generation	C409.4	1,2,3
S4.6	Solar Distillation	C409.4	1,2
S4.7	Solar pumping	C409.4	1,2
S4.8	Solar furnace	C409.4	1,2,7
S4.9	Solar cooking	C409.4	1,2,3
S4.10	Agriculture & Industrial process heat using Solar energy	C409.4	1,2
S4.11	Optical efficiency of solar collectors.	C409.4	1,2
S4.12	Solar energy conversion	C409.4	1,2,3
S4.13	Comparison of different solar collectors	C409.4	1,2,3
S4.14	Maximum Power point tracking	C409.4	1,2,3
S4.15	Solar Chimney	C409.4	1,2

K.L.N. College of Engineering

Department of Electrical and Electronics Engineering

EE6009- POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS

Important Questions/Tutorials/Assignments/Self study/Seminar topics.

1. COURSE OUTCOMES:

Course	Course Outcome	Pos	PSOs
C410E1.1	Discuss and analyze the various types of renewable energy sources	**1,2,6,7,8,11,12**	**1,2,3**
C410E1.2	Analyze the performance of IG,PMSG,SCIG AND DFIG		**1,2,3**
C410E1.3	Design different power converters namely AC to DC,DC to DC and Ac to AC converters for renewable energy sources		**1,2,3**
C410E1.4	Analyze various operating modes of wind electrical generators and solar energy systems		**1,2,3**
C410E1.5	Develop maximum power point tracking algorithms		**1,2,3**

2. Mapping of Course Outcomes (COs) , Course (C), Program Specific Outcomes (PSOs) with Program Outcomes. (POs) – before CBS[Levels of correlation:3(High),2(Medium),1(low).

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO3
C410E1.1	1	2	-	-	-	1	2	-	-	-	-	-	1	-	1
C410E1.2	3	3	-	-	-	1	1	2	-	-	-	3	2	2	1
C410E1.3	3	3	-	-	-	1	1	1	-	-	2	3	2	2	1
C410E1.4	3	3	1	-	-	3	2	3	-	-	3	3	2	2	2
C410E1.5	3	3	1	-	-	3	2	3	-	1	3	3	2	2	2
C410E1	3	3	-	-	-	2	2	2	-	-	2	2	2	2	1

S.No.	**3. Important Questions.**	COs	POs
Q.1.1.	Discuss the qualitative study of different renewable energy resources.	C410E1.1	1,2,6,7
Q.1.2.	Describe various biomass energy conversion techniques.	C410E1.1	1,2,6,7
Q.1.3.	How does environment get affected by the use of the renewable energy? And also discuss GHG emissions from the various energy sources.	C410E1.1	1,2,6,7
Q.1.4.	Show various types of wave energy conversion device and explain how to generate electrical power from waves.	C410E1.1	1,2,6,7
Q.1.5.	Discuss the influence of different renewable energy sources with special reference to the global warming and climate change context.	C410E1.1	1,2,6,7
Q.2.1.	Explain about PMSG based wind energy conversion system in detail. Also discuss its advantages and operating issues.	C410E1.2	1,2,6,7
Q2.2.	Draw the schematic of Double Fed Induction Generator and explain its construction and principle of operation in detail. Discuss its characteristics and limitations briefly.	C410E1.2	1,2,6,7,8
Q.2.3.	Why are induction generators preferred over DC generators in WECS? Give reasons.	C410E1.2	1,2,6,7,8
Q2.4.	Explain the construction and operation of PMSG.	C410E1.2	1,2,6,7,8
Q.2.5.	Explain the principle of operation and constructional features of SCIG with a neat diagram. Analyze the merits and demerits of the above.	C410E1.2	1,2,6,7,8
Q.3.1.	Explain the space vector PWM technique to control 3-phase inverter with neat schematic diagrams.	C410E1.3	1,2,6,7,8
Q.3.2.	Draw and discuss the operation of a Matrix converter.	C410E1.3	1,2,6,7,8
Q.3.3.	Explain with neat diagram the philosophy of operation of a solar source fed boost converter and Point out the delicacies involved in sizing the solar arrays.	C410E1.3	1,2,6,7,8
Q.3.4.	Describe the operation of line commutated converter under inversion mode with the help of a neat circuit diagram and necessary waveforms.	C410E1.3	1,2,6,7,8
Q.3.5.	Explain about various aspects of grid interactive inverters.	C410E1.3	1,2,6,7,8
Q.4.1.	Draw and discuss the operation of grid integrated PMSG system with a neat block diagram. Also discuss its limitation with regard to implementation and operation.	C410E1.4	1,2,3,6,7
Q.4.2.	Discuss in detail the grid system characteristics and explain with a neat diagram the stand alone and grid integrated solar system.	C410E1.4	1,2,3,6,7
Q.4.3.	Design a converter to interface a PV module to the grid and extract the maximum power from it.	C410E1.4	1,2,3,6,7
Q.4.4.	Explain the grid related problems in wind farms and refer the performance improvements of generator controls.	C410E1.4	1,2,3,6,7
Q.4.5.	A HAWT is installed at a location having free wind velocity of 15m/s. The 80m diameter rotor has three blades attached to the hub. Calculate the rotational speed of the turbine for optimal energy extraction.	C410E1.4	1,2,3,6,7
Q.5.1.	Enlighten the need and advantages of hybrid renewable energy systems. also explain the operation of wind-PV hybrid system with neat diagrams in details	C410E1.5	1,2,3,6,7
Q.5.2.	Explain the incremental-conductance based maximum power point tracking algorithm with a suitable illustration.	C410E1.5	1,2,3,6,7
Q.5.3.	Summarize the importance of MPPT in the operation of a photovoltaic system.	C410E1.5	1,2,3,6,7
Q.5.4.	Discuss with case study how to get maximum power generation in wind energy conversion system.	C410E1.5	1,2,3,6,7
Q.5.5.	Design solar PV pump and clearly explain the accessories required. Also justify the importance of implementing MPT for the pump system.	C410E1.5	1,2,3,6,7

	4.Assignments/Seminar/Self study topics.		
A.1.1.	Explain briefly the influence of different renewable energy sources with special reference to the global warming context.	C410E1.1	1,2
A.1.2.	Explain DFIG based wind power generation. Illustrate the independent dq control strategy adopted for dq control.	C410E1.2	1,2
A.2.1.	Explain about various aspects of grid interactive inverters.	C410E1.3	1,2,7
A.2.2.	Explain the grid related problems in wind farms and refer the performance improvements of generator controls.	C410E1.3	1,2,7
A.3.1.	Is wind energy an excellent supplement to the PV? IF so justify with a suitable case study.	C410E1.4	1,2,6,7,8
A.3.2.	Formulate an expression for the total cost of a hybrid system and three from deduce a simple condition for the feasibility of the system.	C410E1.5	1,2,6,7,8
	5.Seminar		
S.1	Hydrogen energy system-A case study		
S.2	Hybrid renewable energy systems- A case study.		
S.3	Space vector PWM inverter		
S.4	Wind energy conversion system-A case study		
S.5	Grid integrated solar system		

K.L.N. College of Engineering

Department of Electrical and Electronics Engineering

GE6757 – Total Quality Management **[C411E2]**

Questions/ Tutorials/Assignments/Self study /Seminar topics.

S.No.	**1. Assignment Questions.**	COs	POs
A.1.1.	What are quality statements?	1	7
A.1.2	Define Quality.	1	7
A.1.3	List various possible stumbling blocks/barriers while implementing a TQM programme in an organization.	1	7,9
A.1.4	Distinguish between internal and External customers.	1	9,10
A.2.1	Discuss the important habits of quality leaders.	2	8
A.2.2	Define empowerment.	2	8
A.2.3	List and explain the 14 points of Deming's Philosophy for quality improvement.	2	7
A.2.4	Narrate the benefits of 5s.	2	7
A.3.1	Mention traditional tools of quality	3	7
A.3.2	State the objectives of FEMA.	3	7
A.3.3	Discuss in detail with a case, the cause and effect diagram.	3	7,9
A.3.4	Outline the steps used to construct the tree diagram.	3	11
	2. Important questions (2 marks)		
Q.1.1	How can quality be quantified?	1	7
Q.1.2	What is meant by customer retention?	1	6
Q.2.1	What do you mean by strategic planning?	2	9
Q.2.2	List the barriers to team progress.	2	7,11
Q.2.3	What is kaizen?	2	11
Q.2.4	What is supplier partnering?	2	9
Q.2.5	State the significance of quality circles.	2	7,9
Q.3.1	Mention seven tools of quality.	3	6
Q.3.2	List out the new seven management tools.	3	6,7
Q.3.3	What are the reasons to benchmark?	3	11
Q.3.4	List the four stages of FEMA.	3	7
Q.4.1	Mention the measures of central tendency.	4	7
Q.4.2	What is six sigma?	4	6,7
Q.4.3	How can QFD deployed?	4	6,7

Q.4.4	What is Taguchi's quality loss function?	4	11
Q.4.5	Why TPM is required?	4	11
Q.4.6	What are the strategic goals of performance measures?	4	6,7
Q.5.1	What are the objectives of ISO9000?	5	7,11
Q.5.2	Explain the concept of environmental management system.	5	7,11
Q.5.3	What are the main elements of ISO 14000?	5	7,11
	3. Important Questions (Essays)		
E.1.1	Write down the underlying principles of TQM.	1	7
E.1.2	Describe the various dimensions of quality.	1	7
E.1.3	What are the barriers while implementing TQM? Also explain evolution of Quality.	1	7
E.1.4	Discuss Juran's principle of quality improvement.	1	6,7
E.2.1	Explain the phase of PDSA cycle and its illustration.	2	6,7
E.2.2	What is 5s and why does the organization adopt this technique?	2	6,7
E.3.1	Explain any three management tools.	3	6,7
E.3.2	Explain 6 sigma and TQM concepts.	3	6,7
E.4.1	Explain with an example of any three control charts.	4	6,9
E.4.2	Devise a QFD methodology for design and development of cups used in vending machine for dispersing hot and cold beverages.	4	6,7
E.5.1	What are the requirements, objectives and benefits of ISO 14000 system?	5	6,11
E.5.2	Explain about the various processes used in ISO 900 quality management system.	5	6,11

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 50496

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017
Eighth Semester
Electrical and Electronics Engineering
EE 6801 : ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. List the advantages and disadvantages of electric traction.
2. Define gear ratio.
3. Why tungsten is selected as the filament material ?
4. Define the term MSCP and lamp efficiency.
5. State the requirements of a good heating material.
6. Differentiate between core type and coreless type induction furnace.
7. Define collector efficiency.
8. List the advantage of solar concentrators.
9. What are the causes of aerodynamic force ?
10. List the factors responsible for distribution of wind energy on the surface of earth.

PART – B (5×16=80 Marks)

11. a) i) Describe the mechanism of train movement with the aid of transmission of tractive effort. (8)

ii) Discuss in detail about series-parallel control of electric traction motor with example. (8)

(OR)

b) Explain in detail about different methods of traction motor control. (16)

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12. a) i) Explain in detail the principle of operation of fluorescent lamp. (8)

ii) Describe and prove laws of illumination. (8)

(OR)

b) Two street lamps are 20m apart and are fitted with a 500 C.P. lamp at a height of 8m above the ground each. Calculate the illumination at a point under each lamp and midway between the lamps. (16)

13. a) i) Describe the construction and working principle of dielectric heating. (8)

ii) Explain the principle and working of welding transformer. (8)

(OR)

b) Describe different types of arc welding with neat diagram. (16)

14. a) Explain the operation of solar cell using equivalent circuit and I-V characteristics. (16)

(OR)

b) Discuss in detail about the performance of cylindrical and parabolic concentrating collector. (16)

15. a) Explain the construction and operation of VAWT with its advantages and disadvantages. (16)

(OR)

b) Describe the functions of various blocks of a WECS with the help of block diagram. (16)

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 71787

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Eighth Semester

Electrical and Electronics Engineering

EE 6801 – ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

(Regulations 2013)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Suggest suitable drives for lifts and cranes.
2. What are the merits and demerits of D.C system of track electrification?
3. What do you understand by polar curves as applied to light source?
4. What is flood lighting where is it generally used?
5. State the properties of a heating element used in indirect resistance heating.
6. Compare A.C. and D.C. sources as source of supply for arc welding.
7. Write down the energy balance equation for solar collector.
8. What is solar constant?
9. Write down the condition for maximum power generation in wind energy conversion system.
10. List the types of wind turbines.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the factors influencing the choice of electric drives? (4)

(ii) Sketch the typical speed-time curve for Main line service and to sub-urban services in electric Traction. Find the equation for distance travelled for main line system. (12)

Or

(b) (i) State the principle of regenerative braking. Explain regenerative braking in respect of DC motors. (6)

(ii) A 250 tonnes train with 10% rotational inertia effect is started with uniform acceleration and reaches a speed of 50 km.p.h.p.s. in 25 sec. on a level road. Find the specific energy consumption if the journey is to be made according to simplified trapezoidal speed time curve, the acceleration is 2 km.p.h.p.s. Tracking retardation 3 km./hr./sec. and distance between the stations is 2.4 km. Efficiency of motors = 0.9, track resistance = 5 kg./tonne. (10)

12. (a) (i) Discuss laws of illumination and its limitations in actual practice. (6)

(ii) A drawing hall 30 * 15 meters with a ceiling height of 3 meters is to be provided with a general illumination of 120 lux. Taking a co-efficient of utilization of 0.5 and depreciation factor of 1.4, determine the number of fluorescent tubes required, their spacing mounting height and total wattage. Tasking luminous efficiency of fluorescent tube as 40 lumens/watt for 80 watt tube. (10)

Or

(b) (i) Explain the working of a sodium vapour lamp with in a neat sketch. (8)

(ii) Show different types of indoor and outdoor lighting with neat Sketches. (8)

13. (a) (i) What are the different types of resistance welding? Describe any one type. (6)

(ii) A 10 kW single phase 200 V resistance oven has a circular nickel chrome wire for its heating elements. The final temperature is to be limited to 927 C and temperature of the charge is to be 327 C. Determine the length and size of the wire required. Assume radiating efficiency = 80%, emissivity = 0.9 and specific resistance of nickel chrome = 100×10^{-6} ohm cm. (10)

Or

(b) (i) Describe the construction and operation of the coreless induction furnaces. (8)

(ii) Explain the process of dielectric heating and derive the expression for total heat energy. (8)

14. (a) (i) Explain the basic phenomenon of solar energy conversion with suitable diagram. (8)

(ii) Explain the solar radiation geometry at earth surface. (8)

Or

(b) (i) What are the main components of a flat plate solar collector, explain the function of each. (8)

(ii) What are the advantages and disadvantages of concentrating collectors over a flat plate collector? (8)

15. (a) (i) With the help of block diagram, describe the functions of various components of a WECS. (10)

(ii) Give some important factors that are considered for site selection of WECS. (6)

Or

(b) With the help of neat diagrams explain in detail about the construction and the working principle of different vertical axis wind turbines. (16)

Reg. No. | | | | | | | | | | | | |

Question Paper Code : 52607

B.E/B.Tech. DEGREE EXAMINATION, APRIL 2016

Eighth Semester

Electrical and Electronics Engineering

EE 2451/EE 81/10133 EE 801 – ELECTRIC ENERGY GENERATION, UTILIZATION AND CONSERVATION

(Regulations 2008/2010)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Mention the various types of Solar PV Cells.
2. What is meant by Distributed Power Generation ?
3. What is meant by the term two part tariff ?
4. Specify the role of Power Capacitor in industries.
5. Define the term Luminous Efficacy.
6. Suggest suitable Lamps for Sports Ground lighting application.
7. Mention the merits of dielectric heating.
8. Specify the desirable properties of heating element materials.
9. What are the factors governing scheduled speed of a Train ?
10. Draw the speed torque characteristics of an ideal Traction system drive.

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Draw the block diagram of a Coal based Thermal Power Plant. Also mention the role of individual blocks. **(8)**

(ii) With a block diagram, explain the working principle of a Wind Electric Generator. **(8)**

OR

(b) (i) Discuss the benefits of Non-conventional Power Generation, when compare to Conventional Power generation. **(8)**

(ii) Explain the working principle of single basin and double basin type Tidal power plant. **(8)**

12. (a) (i) List the various energy efficient electrical equipment. Briefly explain their application and benefit. **(8)**

(ii) A three phase 1000kW Induction Furnace draws an input power of 910kW at 0.72 Power factor Lagging from a 415 Volts 3 Phase Power Supply. Calculate the requirement of Capacitors to be connected in parallel in terms of kVAr rating to improve the existing power factor to Unity. Also calculate the reduction in kVA demand due to power factor improvement of the motor from 0.72 lagging to Unity. **(8)**

OR

(b) (i) What are the factors governing cost of Electrical Energy ? Also explain in details. **(8)**

(ii) An Engineering Industry is charged under three part tariff, based on Demand, Active Energy and Reactive energy Consumption. The monthly energy reading of the consumer is as follow :

Actual Maximum Demand	Energy Consumption	Reactive Energy Consumption
1450 kVA	723840 kWh	43430 kVArh

If the tariff is ₹ 400 per kVA of Actual maximum Demand reached, Units rate is ₹ 4.50 per kWh of consumption plus Reactive Energy rate is 30 paise per kVArh. Calculate the monthly Energy Bill of the above Engineering industry. **(8)**

13. (a) (i) List the various types of lamps commercially available. Also specify the energy efficient lamps for domestic and industrial lighting applications. **(8)**

(ii) A workshop dimension 30 metre × 20 metre is illuminated by 30 Nos. of 400 Watts Metal Halide lamps. The luminous efficacy of Metal Halide lamp is 90 lumens/Watt. The depreciation factor is 1.2 and utilization factor is 0.6. Calculate the illumination level of the working plane. **(8)**

OR

(b) (i) Explain the various steps involved in designing of lighting System for a Workplace. **(8)**

(ii) A Classroom dimension 10 metre × 7.5 metre with a ceiling height of 4 metres is to be provided with general illumination of 300 lux. Considering a co-efficient of utilization is 0.5 and depreciation factor of 1.2. Determine the number of 36 watts fluorescent lamps required. The luminous efficacy of 36 watts fluorescent lamp is 84 lumens per watt. **(8)**

14. (a) (i) Draw the Voltage versus Current characteristics of a Welding trnasformer. How the dropping characteristic is achived in welding transformer ? **(8)**

(ii) Calculate the energy required to melt 1.2 metric ton of Brass in a three phase Induction Furnace, if the time taken is 1 Hour 40 Minutes. The three phase Induction Furnace having the following data :

Latent heat of Brass = 38 kcals / kg

Specific heat of Brass = 0.094

Melting point of Brass = 925°C

Initial temperature of Brass = 25°C

Assume overall efficiency of furnace is 84%. **(8)**

OR

(b) (i) With a conceptual diagram, explain the process of induction heating. **(8)**

(ii) A plywood board 120 cm × 90 cm × 1.5 cm is to be heated to 90°C in 30 minutes by dielectric heating technique at a frequency of 30MHz. The specific heat for wood is 0.35 and specific weight of wood is 0.56 grams/cubic cm. The ambient temperature is 30°C and relative permittivity of 5, absolute permittivity of 8.85×10^{-12}. The operating power factor is 0.05 leading. Calculate the power required for the heating process. **(8)**

15. (a) (i) Discuss the series-parallel control of electric traction motor. Also specify the advantages of the above control. (8)

(ii) A train runs with an average speed of 50 kmph. Distance between stations is 4.5 km. Values of acceleration and retardation are 1.5 kmphps and 1.8 kmphps respectively. Find the maximum speed of the train assuming a trapezoidal speed time curve. (8)

OR

(b) (i) Explain the recent trends in electric traction system. (8)

(ii) A sub-urban traction system has a maximum speed of 60 kmph. The scheduled speed including a station stop of 60 seconds in 40 kmph. If the acceleration is 1.8 kmphps, calculate the value of retardation, when the average distance between stop is 3 km. (8)

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 50467

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017
Eighth Semester
Electrical and Electronics Engineering
EE 6009 – POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS
(Regulations 2013)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions.

PART – A (10×2=20 Marks)

1. Write down the current equation of solar array.
2. Define specific rated capacity of wind turbine.
3. What is reference frame transformation ?
4. Compare SCIG and DFIG.
5. Draw the block diagram of solar photovoltaic system.
6. What are the advantages of matrix converter ?
7. What are the advantages of variable speed wind turbine conversion system ?
8. Draw the equivalent circuit of a non salient pole synchronous machine.
9. List out the need for hybrid renewable energy system.
10. What is the concept of MPPT ?

50467

PART – B (5×16=80 Marks)

11. a) Explain the construction, working and different characteristics of solar array in detail. (16)

(OR)

b) i) With the neat diagram explain the energy generation using hydrogen energy system. (8)

ii) Describe the concept of electric power generation from Biomass. (8)

12. a) Explain the steady state equivalent circuit model and performance characteristics of squirrel cage induction generator in detail. (16)

(OR)

b) Explain the construction and working of PMSG and analyze the system using steady state equation with phasor diagram. (16)

13. a) Write short notes on :

i) Current regulated PWM inverters. (8)

ii) Selection of inverter. (4)

iii) Selection of battery sizing. (4)

(OR)

b) Explain the different modes of operation of PV fed Buck-Boost converter in detail. (16)

14. a) Explain the operation of fixed speed and semi variable mode of wind energy conversion system with neat sketch. (16)

(OR)

b) Explain the circuit model of grid integrated solar system. (16)

15. a) Explain the operation of autonomous PV system with an MPPT conveter and battery backup with neat sketch. (16)

(OR)

b) Explain any three different configuration of Hybrid renewable energy system in detail. (16)

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 71758

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Eighth Semester

Electrical and Electronics Engineering

EE 6009 — POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give any two environmental aspects of electric energy conversion.
2. Justify how fuel cell becomes renewable energy source.
3. Name any four types of generators used in wind energy conversion systems.
4. Write the significance of reference theory.
5. What is the function of boost converter in solar photovoltaic system?
6. What is called matrix converter?
7. Distinguish between fixed speed and variable speed wind energy conversion system.
8. What are the major problems associated with grid integration of wind energy system?
9. What are the advantages of hybrid renewable energy systems?
10. What is the importance of Maximum Power Point Tracking (MPPT) in the operation of a photovoltaic system?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Discuss the impact of renewable energy based power generation on environmental issues. (8)

(ii) What is Hydrogen energy? Explain the operation of Hydrogen energy system with schematic diagram. (8)

Or

(b) List out the available renewable energy sources. Explain how solar and wind energy sources plays significant role of electric power generation. (16)

12. (a) Draw the equivalent circuit and show the steady state analysis of Permanent Magnet Synchronous Generator (PMSG). Explain the merits and demerits of PMSG for wind energy conversion system. (16)

Or

(b) (i) Explain the operating principle of Squirrel Cage Induction Generator coupled with wind turbine. (8)

(ii) Show the relative merits of wind energy conversion system with Permanent Magnet Synchronous Generator (PMSG), Squirrel Cage Induction Generator (SCIG), and Doubly Fed Induction Generator (DFIG). (8)

13. (a) Draw the schematic diagram of standalone solar photovoltaic system. What are the main components used in it? Explain their functions. (16)

Or

(b) (i) Draw the power circuit of grid interactive inverter and explain its operation. (8)

(ii) Explain the need of AC-DC-AC converters for wind energy conversion system. (8)

14. (a) Draw the general structure of variable speed wind energy conversion for standalone system. Explain the functions of components used. Mention the merits and demerits of variable speed wind energy conversion. (16)

Or

(b) What is the need for grid integration of wind energy system? With power electronic interface circuit, explain how grid integration is done for Permanent Magnet Synchronous Generator (PMSG) based wind energy conversion system. (16)

15. (a) Show the power electronic system used for hybrid solar photovoltaic and wind energy system and explain its operation. Discuss the technical challenges associated in it. (16)

Or

(b) What is called Maximum Power Point Tracking (MPPT)? List out the different types of MPPT algorithms used for solar photovoltaic system with its salient features. Explain the use of MPPT for hybrid wind and photovoltaic energy system. (16)

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 50659

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017

Sixth/Seventh/Eighth Semester

Mechanical Engineering

GE 6757 – TOTAL QUALITY MANAGEMENT

(Regulations 2013)

(Common to Aeronautical Engineering, Automobile Engineering, Biomedical Engineering, Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, Environmental Engineering, Industrial Engineering, Industrial Engineering and Management, Instrumentation and Control Engineering, Manufacturing Engineering, Materials Science and Engineering, Mechanical and Automation Engineering, Mechatronics Engineering, Medical Electronics Engineering, Petrochemical Engineering, Production Engineering, Chemical Engineering, Fashion Technology, Food Technology, Information Technology, Petrochemical Technology, Petroleum Engineering, Pharmaceutical Technology, Plastic Technology, Polymer Technology)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions.

PART – A **(10×2=20 Marks)**

1. What is quality statement ?
2. What are the dimensions of quality ?
3. What are the continuous process improvement ?
4. What is quality circle ?
5. What do you mean by six sigma ?
6. List the stages of FMEA.
7. What are the objectives of QFD ?
8. Classify the control charts.
9. What is need for ISO ?
10. What is quality audit ?

50659

PART – B (5×16=80 Marks)

11. a) i) Why to measure quality costs ? Classify the various types of quality costs and give examples.

ii) What are the customer perceptions of quality ? Explain.

(OR)

b) Explain Deming's fourteen principles for Quality Management. How do you feel that these will be useful in today's context in service industry.

12. a) Elaborate the Japanese 5s as applicable to services.

(OR)

b) Discuss the role and contributions of quality council.

13. a) Describe the traditional seven QC tools and their merits and demerits.

(OR)

b) Explain in detail the concept of FMEA.

14. a) Discuss the

i) Concepts of TPM and (10)

ii) Differentiate with TQM. (6)

(OR)

b) i) The Taguchi loss function for a certain component is given by L(X) = 7500 (X-N)2, where X = the actual value of a critical dimension and N is its Nominal value. Company Management has decided that the maximum loss that can be accepted is Rs. 400. If the nominal dimension is 35.00 mm. Find the tolerance limits. (10)

ii) Explain the concept of signal to Noise ratio. (6)

15. a) Explain how each element of TQM contributes to products and services of superior quality.

(OR)

b) Describe the implementation of ISO 14000 requirements and benefits.

Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 73633

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Sixth/Seventh/Eighth Semester

Civil Engineering

GE 2022/GE 607/GE 71/IE 72/10177 GE 004/10144 GE 004/10177 GE 701/ 10144 CSE 44 – TOTAL QUALITY MANAGEMENT

(Common to All Branches)

(Regulations 2008/2010)

(Also common to PTGE 2022/10177 GE 004/10144 GE 004/10144 CSE 44 – Total Quality Management for B.E. (Part-Time) Fifth/Sixth/Seventh Semester – Civil Engineering – ECE, CSE, EEE and Mechanical Engineering – Regulations 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the elements of TQM?
2. What do you mean by service quality?
3. What do you understand by "Supplier rating"?
4. List the benefits of team work.
5. What are the factors that distinguish six sigma concepts from traditional quality management concepts?
6. What is meant by Failure Mode and Effect Analysis?
7. Who constitute a quality circle?
8. What are the big losses avoided by TPM?
9. Explain briefly the Environmental Management System.
10. What is QS 9000 standard?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the characteristics of TQM derived from its definitions. (8)

(ii) Explain the Juran's views of TQM. (8)

Or

(b) (i) "Various difficulties can be anticipated in the implementation of TQM programme". Validate the statement. (8)

(ii) Discuss in detail the dimensions of Quality in the context of 'Service'. (8)

12. (a) Discuss the importance of "employee involvement" and "motivation" for enhancing quality.

Or

(b) Explain the issues related to customer's complaints and retention.

13. (a) (i) How is cause and effect diagram constructed? Explain with an example. (8)

(ii) Explain with an example how is a matrix diagram used. (8)

Or

(b) (i) How is six sigma implemented in practice? Give a case study. (8)

(ii) Discuss the benchmarking process with an example. (8)

14. (a) Explain the various types of costs contributing to the cost of quality. Give examples for each. (16)

Or

(b) Discuss in detail how the voice of customer in transformed into technical and functional requirements by QFD. (16)

15. (a) (i) Discuss about the four important documents to be prepared for ISO 9000 certification. (10)

(ii) What are benefits of implementing ISO 14000 standard? (6)

Or

(b) Discuss the various elements of ISO 9000:2000 quality system. (16)

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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 60637

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Sixth/Seventh/Eighth Semester

Civil Engineering

GE 2022/GE 607/GE 71/IE 72/10177 GE 004/10144 GE 004/10177 GE 701/ 10144 CSE 44 — TOTAL QUALITY MANAGEMENT

(Common to All Branches)

(Regulations 2008/2010)

(Also common to PTGE 2022/10177 GE 004/10144 GE 004/10144 CSE 44 — Total Quality Management for B.E. (Part–Time) Fifth/Sixth/Seventh Semester – Civil Engineering – ECE, CSE, EEE and Mechanical Engineering – Regulations 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List two basic needs of Quality.
2. What are the barriers to TQM?
3. Define Quality Planning.
4. How do you assess the performance of a Team?
5. List any two reasons for bench marking.
6. Define the term Six-Sigma in TQM.
7. What are uses of FMEA?
8. State any two reasons for Quality measure.
9. Give your view on ISO 9000-2000 Quality system.
10. How do you audit the Quality in TQM?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Describe the Deming's 14 points for top management in TQM. (8)

(ii) Explain the dimensions of manufacturing and service quality with suitable examples. (8)

Or

(b) Explain the contributions of Juran and Crosby to total quality management. (16)

12. (a) Explain the following with an example.

(i) Continuous process improvement (8)

(ii) Performance appraisal. (8)

Or

(b) (i) Explain the two ways of Kaizen implementation. (8)

(ii) Describe the PDSA cycle in detail. (8)

13. (a) (i) Elaborate any five traditional tools of quality in TQM. (8)

(ii) State and explain the Six Sigma Concepts. (8)

Or

(b) Explore the various reasons to bench mark and its failures in bench marking. (16)

14. (a) Derive the expressions and explain the Taguchi loss function with neat graph. (16)

Or

(b) Explain the concept of QFD. (16)

15. (a) (i) Describe the process of documentation and quality auditing in ISO 9000:2000 quality system. (8)

(ii) Explain the various needs of ISO 14000. (8)

Or

(b) Describe the TQM implementation in manufacturing and service sectors with suitable example. (16)

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ANNA UNIVERSITY :: CHENNAI 600 025

FORMAT FOR PREPARATION OF PROJECT REPORT

FOR

B.E. / B. TECH. / B. ARCH.

1. ARRANGEMENT OF CONTENTS:

The sequence in which the project report material should be arranged and bound should be as follows:

1. Cover Page & Title Page
2. Bonafide Certificate
3. Abstract
4. Table of Contents
5. List of Tables
6. List of Figures
7. List of Symbols, Abbreviations and Nomenclature
8. Chapters
9. Appendices
10. References

The table and figures shall be introduced in the appropriate places.

2. PAGE DIMENSION AND BINDING SPECIFICATIONS:

The dimension of the project report should be in A4 size. The project report should be bound using flexible cover of the thick white art paper. The cover should be **printed in black letters** and the text for printing should be identical.

3. PREPARATION FORMAT:

3.1 Cover Page & Title Page – A specimen copy of the Cover page & Title page of the project report are given in **Appendix 1.**

3.2 Bonafide Certificate – The Bonafide Certificate shall be in double line spacing using Font Style Times New Roman and Font Size 14, as per the format in **Appendix 2.**

The certificate shall carry the supervisor's signature and shall be followed by the supervisor's name, academic designation (not any other responsibilities of administrative nature),

department and full address of the institution where the supervisor has guided the student. The term **'SUPERVISOR'** must be typed in capital letters between the supervisor's name and academic designation.

3.3 **Abstract –** Abstract should be one page synopsis of the project report typed double line spacing, Font Style Times New Roman and Font Size 14.

3.4 **Table of Contents –** The table of contents should list all material following it as well as any material which precedes it. The title page and Bonafide Certificate will not find a place among the items listed in the Table of Contents but the page numbers of which are in lower case Roman letters. One and a half spacing should be adopted for typing the matter under this head. A specimen copy of the Table of Contents of the project report is given in **Appendix 3.**

3.5 **List of Tables –** The list should use exactly the same captions as they appear above the tables in the text. One and a half spacing should be adopted for typing the matter under this head.

3.6 **List of Figures –** The list should use exactly the same captions as they appear below the figures in the text. One and a half spacing should be adopted for typing the matter under this head.

3.7 **List of Symbols, Abbreviations and Nomenclature** – One and a half spacing should be adopted or typing the matter under this head. Standard symbols, abbreviations etc. should be used.

3.8 **Chapters** – The chapters may be broadly divided into 3 parts (i) Introductory chapter, (ii) Chapters developing the main theme of the project work (iii) and Conclusion.

The main text will be divided into several chapters and each chapter may be further divided into several divisions and sub-divisions.

- ❖ Each chapter should be given an appropriate title.
- ❖ Tables and figures in a chapter should be placed in the immediate vicinity of the reference where they are cited.
- ❖ Footnotes should be used sparingly. They should be typed single space and placed directly underneath in the very same page, which refers to the material they annotate.

3.9 **Appendices** – Appendices are provided to give supplementary information, which is included in the main text may serve as a distraction and cloud the central theme.

- Appendices should be numbered using Arabic numerals, e.g. Appendix 1, Appendix 2, etc.
- Appendices, Tables and References appearing in appendices should be numbered and referred to at appropriate places just as in the case of chapters.
- Appendices shall carry the title of the work reported and the same title shall be made in the contents page also.

3.10 List of References –The listing of references should be typed 4 spaces below the heading "REFERENCES" in alphabetical order in single spacing left – justified. The reference material should be listed in the alphabetical order of the first author. The name of the author/authors should be immediately followed by the year and other details.

A typical illustrative list given below relates to the citation example quoted above.

REFERENCES

1. Ariponnammal, S. and Natarajan, S. (1994) 'Transport Phonomena of Sm Sel – X Asx', Pramana – Journal of Physics Vol.42, No.1, pp.421-425.

2. Barnard, R.W. and Kellogg, C. (1980) 'Applications of Convolution Operators to Problems in Univalent Function Theory', Michigan Mach, J., Vol.27, pp.81–94.

3. Shin, K.G. and Mckay, N.D. (1984) 'Open Loop Minimum Time Control of Mechanical Manipulations and its Applications', Proc.Amer.Contr.Conf., San Diego, CA, pp. 1231-1236.

3.10.1 Table and figures - By the word Table, is meant tabulated numerical data in the body of the project report as well as in the appendices. All other non-verbal materials used in the body of the project work and appendices such as charts, graphs, maps, photographs and diagrams may be designated as figures.

4. TYPING INSTRUCTIONS:

The impression on the typed copies should be black in colour.

One and a half spacing should be used for typing the general text. The general text shall be typed in the Font style 'Times New Roman' and Font size 14.

*** * * * ***

APPENDIX 1
(A typical Specimen of Cover Page & Title Page)
<Font Style Times New Roman – Bold>

TITLE OF PROJECT REPORT

<Font Size 18><1.5 line spacing>

A PROJECT REPORT
<Font Size 14>

Submitted by
<Font Size 14><Italic>

NAME OF THE CANDIDATE(S)
<Font Size 16>

in partial fulfillment for the award of the degree

of

<Font Size 14><1.5 line spacing><Italic>

NAME OF THE DEGREE
<Font Size 16>

IN

BRANCH OF STUDY
<Font Size 14>

NAME OF THE COLLEGE
<Font Size 14>

ANNA UNIVERSITY : CHENNAI 600 025

<Font Size 16><1.5 line spacing>

MONTH & YEAR
<Font Size 14>

SPECIMEN

SOME PERFORMANCE ASPECTS CONSIDERATIONS OF A CLASS OF ARTIFICIAL NEURAL NETWORK

A PROJECT REPORT

Submitted by

SANDHYA. A

GAYATHRI.R

in partial fulfillment for the award of the degree

of

BACHELOR OF ENGINEERING

in

INSTRUMENTATION AND CONTROL ENGINEERING

XXX ENGINEERING COLLEGE, KANCHEEPURAM

ANNA UNIVERSITY:: CHENNAI 600 025

MAY 2005

APPENDIX 2
(A typical specimen of Bonafide Certificate)
<Font Style Times New Roman>

ANNA UNIVERSITY : CHENNAI 600 025

<Font Style Times New Roman – size -18>

BONAFIDE CERTIFICATE

<Font Style Times New Roman – size -16>

<Font Style Times New Roman – size -14>

Certified that this project report **"…….TITLE OF THE PROJECT……..."**

is the bonafide work of "**……..NAME OF THE CANDIDATE(S).……"**

who carried out the project work under my supervision.

<<Signature of the Head of the Department>>
SIGNATURE

<<Name>>
HEAD OF THE DEPARTMENT

<<Department>>

<<Full address of the Dept & College >>

<<Signature of the Supervisor>>
SIGNATURE

<<Name>>
SUPERVISOR

<<Academic Designation>>

<<Department>>

<<Full address of the Dept & College >>

APPENDIX 3
(A typical specimen of table of contents)
<Font Style Times New Roman>

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ANNA UNIVERTISY, CHENNAI -25.
OFFICE OF THE CONTROLLER OF EXAMINATIONS

RULES OF THE EXAMINATIONS

A candidate is permitted to use geometric tools, non-programmable calculators and approved tables and data books only during the theory and the practical examinations. No other material/gadget (including cell phone) should be brought inside the examination hall.

A candidate should neither possess/refer any forbidden material in any form nor should seek/obtain assistance in any form from any person/source towards answering the questions during the examinations. He/she should not assist other candidates in any form towards answering the questions during the examinations. The candidate should not reveal his/her identity in any form in the answer scripts. The candidate should not indulge in canvassing either directly or indirectly to award more than deserving marks in the exanimations. The candidate should maintain discipline and decorum during the examinations.

Violation of the above rules in any form during the examinations will attract punishment ranging from levying fine to permanently debarring the candidate from continuing his/her studies as given below.

Sl.No.	Nature of Malpractice	Maximum Punishment
1	Appeal by the candidate in the answer script to show mercy by way of awarding more than deserving marks.	Fine of Rs. 1000/- per subject.
2	The candidate writing his/her name in the answer script.	
3	The candidate writing his/her registration number/college name in places other than specified in the answer script	
4	Any special marking in the answer script by the candidate.	
5	The candidate communicating with neighbouring candidate orally or non-verbally; the candidate causing suspicious movement of his/her body.	
6	Irrelevant writing by the candidate in the answer script.	
7	The candidate marking on the question paper or writing answer on his/her question paper or making use of his/her question paper for rough work	
8	The candidate possessing cell phones/programmable calculator(s)/any other electronic storage device(s) **gadgets**	Invalidating the examination of the particular subject written by the candidate
9	The Candidate facilitating the other candidate(s) to copy from his /her answer script	

10	The candidate possessing any incriminating material(s) (whether used or not). For example:- Written or printed materials, bits of papers containing written information, writings on scale, calculator, handkerchief, dress, part of the body, Hall Ticket, etc.	Invalidating the examinations of the subject concerned and all the theory and the practical subjects of the current semester registered by the candidate. Further the candidate is not considered for revaluation of answer scripts of the arrears-subjects. If the candidate has registered for arrears – subjects only, invalidating the examinations of all the arrears – subjects registered by the candidate.
11	The candidate possessing cell phone(s)/programmable calculator(s)/any other electronic storage device(s) **gadgets** and containing incriminating materials (whether used or not).	
12	The Candidate possessing the question paper of another candidate with additional writing on it.	
13	The candidate passing his/her question paper to another candidate with additional writing on it	
14	The candidate passing incriminating materials brought into the examination hall in any medium (hard/soft) to other candidate(s).	
15	The candidate copying from neighbouring candidate.	
16	The candidate taking out of the examination hall answer booklet(s), used or unused	
17	Appeal by the candidate in the answer script coupled with a promise of any form of consideration.	
18	Candidate destroying evidence relating to an alleged irregularity.	Invalidating the examinations of the subject concerned and all the theory and the practical subjects of the current semester registered by the candidate. Further the candidate is not considered for revaluation of answer scripts of the arrears-subjects. If the candidate has registered for arrears – subjects only, invalidating the examinations of all the arrears – subjects registered by the candidate. **Additional Punishment:** 1. if the candidate has not completed the programme, he/she is debarred from continuing his/her studies for one year i.e., for two subsequent semesters. However the student is permitted to appear for the examination in all the arrears-subjects up to the last semester during the debarred period. 2. if the candidate has completed the programme, he/she is prevented from writing the examinations of the arrears-subjects for two subsequent semesters.
19	Vulgar/offensive writings by the candidate in the answer script.	Invalidating the examinations of all the theory and practical subjects of the current semester and all the arrears –subjects registered by the candidate.
20	The candidate possessing the answering script of another candidate	
21	The candidate passing his /her answer script to another candidate	

22	Involved in any one or more of the malpractices of serial no. 8 to 21 for the second or subsequent times.	Invalidating the examinations of all the theory and practical subjects of the current semester and all the arrears –subjects registered by the candidate. **Additional Punishment:** (i) If the candidate has not completed the programme, he/she is debarred from continuing his/her studies for one year i.e., for two subsequent semesters. However the student is permitted to appear for the examination in all the arrears-subjects up to the last semester during the debarred period. (ii) If the candidate has completed the programme, he/she is prevented from writing the examinations of the arrears-subjects for two subsequent semesters.
23	The candidate substituting an answer book let prepared outside the examination hall for the one already distributed to the candidate	
24	The candidate indulge in any disruptive conduct including, but not limited to, shouting, assault of invigilator, officials or students using abusive and /or threatening language, destruction of property.	Invalidating the examinations of all the theory and practical subjects of the current semester and all the arrears –subjects registered by the candidate. **Additional Punishment:** (i) if the candidate has not completed the programme, he/she is debarred from continuing his/her studies for **two years** i.e., for four subsequent semesters. However the student is permitted to appear for the examination in all the arrears-subjects up to the last semester during the debarred period. (ii) if the candidate has completed the programme, he/she is prevented from writing the examinations of the arrears-subjects for four subsequent semesters.
25	The candidate harass or engage others to harass on his/her behalf an invigilator, official, witnesses or any other person in relation to an irregularity by making telephone calls, visits, mails or by any other means.	
26	Candidate possessing any firearm/weapon inside the examination hall.	
27	Cases of Impersonation	(i)Handing over the impersonator to the police with a complaint to take appropriate action against the person involved in the impersonation by the Chief Supt. (ii)If a student of this University is found to impersonate a 'bonafide student', the impersonating student is debarred from continuing his/her studies and writing the examinations **permanently.** He/she is not eligible for any further admission to any programme of the University. (iii)Debarring the 'bonafide student' for whom the impersonation was done from continuing his/her studies and writing the examinations **permanently.** He/she is not eligible for any further admission to any programme of the University.

CONTROLLER OF EXAMINATIONS

K.L.N. COLLEGE OF ENGINEERING, Pottapalayam 630612
(11 km from Madurai City)

STUDENTS LEAVE APPLICATION FORM

Department of Electrical and Electronics Engineering **Date:**

Name of the Student: **Roll No. :** **Sem / Sec. :**

Details of leave availing / applied: Date & Day: **No. of. Days (a):**

Reason for Leave :

No. of days, leave & OD, already availed (b): **Total. No. of. Days (a+b):**

% of Attendance as on : _____ is _____

Signature of the Student **Name, Mobile No. & Signature of Parent / Guardian**

Recommended / Not Recommended

Class Coordinator **HOD/EEE**

K.L.N. COLLEGE OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINERING

NORMS FOR ATTENDING WORKSHOP / SEMINAR/ TECHNICAL SYMPOSIUM/ CONFERENCE / TECHNICAL CONTEST etc.

Students are regularly encouraged to attend skill development programme such as workshop / seminar / Technical Symposium / Conference / Technical Contest etc., outside the college. This is to facilitate to improve their technical skills and competency. However, frequently attending such events will reduce their academic performance, as they are not consistent in attending regular Theory / Practical classes. Also, it was reported that, few students were absent for class tests /CIT's and regular practical classes, in order to attend such skill development programme. Hence, the following norms are framed, in order to balance the academic performance and facilitate the students to attend skill development programme.

1. A student will be permitted, to attend skill development programme, not **more than three events per semester (6 days – OD- maximum).**
2. Academic performance of the students will be considered, before permitting a student to attend skill development programme **(Upto 3 arrears, passed 4 subjects in Class test / CIT's – only will be permitted).**
3. Attendance of the student should **not be less than 90% as on date.**
4. No history of disciplinary action taken on the students**.**
5. Students will not be permitted during Class test / Centralized Internal Test to attend Skill development programme. However students with high academic performance will be permitted, considering the nature of the event during class tests.
6. Students will be permitted to attend such events, only in the higher learning Institutions. (IITs, IISC, NITs, Anna University, MIT, NAAC accredited (A grade), Deemed Universities, NBA accredited, Government & Government Aided Institutions and Self financing Engineering Colleges).
7. Students are instructed to refer the academic calendar of the College, regularly so as to know the Internal test schedule and other events.
8. Students registering any events, without following above norms and not obtaining prior permission, **will not be granted ON DUTY and no RETEST** will be conducted. Necessary action will be taken against defaulters.
9. ON DUTY form is revised, accordingly, in order to incorporate all the above details.
10. Class Co-ordinators / Academic Co-ordinators are instructed to recommend for OD, as per the above norms.

HOD/EEE

K.L.N.COLLEGE OF ENGINEERING
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Format No.: F127

ON DUTY REQUISITION FORM
STUDENTS – TO ATTEND SKILL DEVELOPMENT PROGRAMMES
(Workshop / Seminar / Symposium etc.)

Date: _____

To,

The Principal,

KLNCE,

Pottapalayam.

Respected Sir,

Sub.: Request for OD to attend _____

(Workshop / Conference / Value added course / Symposium / Project Contest / Seminar / Certificate Course / In-plant training / Internship)

As, I am going to attend _____ conducted by _____ (Venue & Place) from_____ to_____. Please permit me to attend the programme and also grant me O.D. for these days.

S.No	Roll No.	Name & (Degree, Semester / Section)	No. of Programmes already attended & Days OD availed	No. of Arrears in AU Exam	No. of subjects failed in Class Test	No. of Subjects failed in CIT's	ATT % As on	Sign

Discipline / misbehavior, reported if any :

Clash with Internal test if any :

Recommended by		
Class Co-ordinator	HOD	
	OD Permitted	OD Approved

BONAFIDE CERTICATE

To

The Principal,

KLNCE,

Pottapalayam.

Sub: Requisition for Bonafide Certificate

****

Respected Sir,

Kindly issue Bonafide Certificate to me

Purpose :

Venue :

Name :

Father's Name :

Roll No. :

Department :

Year & Sem :

Thanking You,

Yours Sincerely,

Date :

Station :

Recommended by :

Received :

A BRIEF HISTORY OF THE COLLEGE

K.L.N. College of Engineering is the first self-financing Co-educational Engineering College in Madurai, started in 1994 by Munificence of Philanthropist and well wishers in Sourashtra Community which is a linguistic minority in Tamilnadu. This college is sponsored by the committee of eminent industrialists and academicians led by enthusiastic, educationalist and industrialist (Late) Thiru K.L.N. Krishnan. This college has the approval of All India Council for Technical Education, New Delhi and is affiliated to Anna University, Chennai.

Thiru. K.L.N. Krishnan, Founder President of this Engineering College has rendered Yeoman service to Sourashtra Arts & Science College and Sourashtra Girls Higher Secondary School, Madurai for the past several years. He also promited a Polytechnic under the name of K.L. Nagaswamy Memorial Polytechnic College in Viraganur, Madurai in 1983. This Engineering College, functioned in the premises of the above polytechnic during the academic years 1994-95 & 1995-96 was shifted to its own premises in the year 1996.

(Late) Thiru K.L.N. Krishnan is the Founder President, and the college is now under the management of Dr. K.N.K. Ganesh as Secretary & Correspondent and other executive committee members.

Campus :

This college is situated on the South Eastern outskirts of Madurai, 11th Km on Madurai – Nedungulam Road. It is built in an area of 53.8 acres. The Campus has multistoreyed buildings consisting of well provided class rooms, drawing halls, seminar halls, conference hall, library, Air-Conditioned Computer centres, staff rooms and student rest rooms. The infrastructure also consists of five double storeyed laboratory buildings and three single storeyed workshops and Machine shop, and an automobile workshop.

The Administrative block (2 storeyed) of 1,185 sq. metre with office in the ground floor, I.T. laboratory in the first floor & class rooms in the second floor has been constructed on the eastern side.

A two storeyed block of 1,185 sq. metre consisting class room has been constructed on the southern side of the administrative block.

A two storeyed block of 1,185 sq. metre with EIE laboratory in the ground floor, DSP laboratory in the first floor & class rooms in the second floor has been constructed on the western side of the administrative block.

A two storeyed block of 2,122 sq. metre with spacious library, video library & Electronic resource section in the ground floor, class rooms in the first floor & CSE laboratory in the second floor has been constructed near the administrative block.

A single storeyed block of 1,193 sq. metre with S.M. laboratory in the ground floor CAD, CAM laboratories in the first floor & class rooms in the second floor has been constructed on the north western side of the administrative block.

Three Mechanical sheds (occupied by three Mech. Engg. Laboratory) of 2460 sq. metre have been constructed on the northern side of the mechanicalblock. An automobile work shop of 2304 sq. metre has been constructed on the north western side of the administrative block.

An Indoor stadium cum Auditorium of 2,221 sq. metre has been constructed on the northern side of the administrative block.

A separate double storeyed post-Graduate block of 4,020 square metre for M.B.A. and M.C.A. departments has been constructed on the South Western side of the administrative Block.

A single storeyed block of two canteens with 2,485 square metre in the ground floor and ladies rest room in the first floor has been contructed on the south western side of the Administrative Block.

A single storeyed block of 1,289 square metre for Electrical & Electronics Engg., Laboratories & class rooms in the ground floor and Electronics & Communication Laboratory and Class rooms in the first floor has been constructed on the western side of the Administrative Block.

A two-storeyed block with an area of 2,956 sq. metre has been constructed as an extension to Block III Opposite the U.G. library Block. This block comprised Physics lab, Chemistry lab and EIE Lab. D.S.P. Lab & Class rooms.

A two-storeyed block with an area of 2076 squre metre for the use of EEE Dept. in the ground floor & ECE Dept. in the first & 2nd floors is now under construction as an extension to the existing EEE & ECE block on the western side of the administrative block.

A two storeyed block with an area of 2,977 sq. metre for the use of Mechanical & Automobile depts. is now under construction, as an extension to the existing Mechanical block on the North-Western side of the administrative block.

A separate building with ground floor of area of 170 sq. metre for the installation of Generator on the South-estern side (Opposite to the Vinayagar temple) of the administrative block is under construction & (nearing completion)

In order to facilitate the easy accessibility for the students, in all, 950 numbers of computers have been installed so far. This sounds the management's conviction in providing essential infrastructure for the learning purpose in our college.

An overhead Tank of 20,000 Litre Capacity at a height of 40 feet has been constructed at a cost of Rs.4 lakhs, donated by Rotary international, Rotary District-1240, Rotary club of LEIGH-ON-SEA. Treated drinking water plant at a cost of Rs.2 lakhs has been installed near the overhead tank.

Well-furnished Men's Hostel, Mess block and canteen block are also inside the campus. The college is a quiet retreat, ideal for concentrated study, away from distractions and disturbances of a large city.

A single storeyed block of 1,330 square metre with a spacious dining hall in the ground floor and 13 rooms in the first floor for men students has been constructed on the northern side of the administrative block and is already in use. A two storeyed hostel block of 2,034 square metre adjacent to the existing hostel for men students has been constructed.

Total expenditure incurred so far towards the cost of equipments & buildings & other assets is about Rs.22.50 crores.

A VINAYAGAR Temple on the eastern side of the administrative Block has been constructed. Eight class rooms for I year B.E. / B.Tech 2 class room for M.E. (P.S.) students, and two staff rooms have been constructed in the ECE/EEE block.

A Ladies Hostel of 1460 sq.m. which can accommodate about 150 students is within the campus.

HISTORY OF THE DEPARTMENT

<table>
<tr><th colspan="2">B.E. - Electrical and Electronics Engineering</th><th colspan="2">M.E. - Power Systems Engineering</th><th colspan="2">Ph.D.</th></tr>
<tr><td rowspan="4">Year of start & History of Intake</td><td>1994, with an intake of 40</td><td rowspan="4">Year of start & History of Intake</td><td>2004, with an intake of 18</td><td>Year of Recognition as Research Centre</td><td>2012</td></tr>
<tr><td>1996, with an intake of 60</td><td rowspan="3">2012, with an intake of 24</td><td rowspan="3">First Renewal</td><td rowspan="3">2015, upto December 2018</td></tr>
<tr><td>2002, with an intake of 90</td></tr>
<tr><td>2011, with an intake of 120</td></tr>
<tr><td colspan="6">Both UG & PG programs are permanently affiliated to Anna University, Chennai.</td></tr>
<tr><td colspan="6">Accreditation status</td></tr>
<tr><td>First Accreditation</td><td>Second Accreditation</td><td>Third Accreditation</td><td colspan="3">Fourth Accreditation</td></tr>
<tr><td>3 YEARS W.E.F. 19-3-2004</td><td>3 YEARS W.E.F. 19-7-2008</td><td>2 YEARS W.E.F. 05-08-2013</td><td colspan="3">Academic Year 2016-17,2017-18 and 2018-19, i.e., upto 30-06-2019</td></tr>
</table>

FACULTY PROFILE as on December 2017

Ph.D's	Doing Ph.D	M.E.
10	7	11
Professors	**Associate Professor**	**Assistant Professor**
05	**05**	**18**

SALIENT FEATURES OF THE DEPARTMENT

1.GENERAL

- Started offering B.E. in Electrical and Electronics Engineering in the year 1994 with an intake of 40 (No.-732-50-8/RC/94, dated 11th August 1994, AICTE), an intake of 60 in 1996, an intake of 90 in 2002 (F.No :730-52-227(E)/ET/97 dated 19.06.2002), with the latest intake of 120 in 2011 (F.No.Southern/1-400215781/2011/EOA, dated 01.09.2011, AICTE).
- Started offering M.E. in Power Systems Engineering in the year 2005 with an intake of 20 and increased intake to 24 in 2012 (F.No.Southern/1-687512981/2012/EOA, dated 10.05.2012, AICTE).
- Accredited in March 2004 (First time – F.No.NBA/ACCR-242/2003, dated 24/03/04) and Re-accredited (Second time – F.No.NBA/ACCR-242/2003, dated July 19, 2008), Re-accredited (Third time - For 2 years w.e.f. 28-08-2012), Re-accredited (Fourth time – For 3 years w.e.f. July 2016, upto 30.06.2019, F.No. 33-01/20100-NBA, dated 04.02.2017) by National Board Accreditation, New Delhi.
- Recognized Research Centre No.4490408, Approved by Anna University, Chennai with effect from December 2012, offering guidance for M.S & Ph.D.(Full time/Part time) (Renewed upto December 2018, Lr.No. 4904/IR/EEE/AR1 dated 18.02.2016).
- Both UG and PG programs are permanently affiliated to Anna University, Chennai with effect from December 2012.
- MODROB fund of Rs.5 lakhs was allotted for the year 2011-2012 for the Power Electronics laboratory (No.8024/RIFD/MOD-131(pvt)/Policy-III/2011-2012, dated 06.03.2012).
- Department of Science and Technology (DST), sanctioned financial assistance of ₹19,75,800-/- for the project entitled 'Smart Meter for measuring Power Quality Disturbances using GSM Technology', Dr.K.Gnanambal, Professor/EEE is the Principal Investigator (Ref. No. IDP/IND/4/2015 dated 03.08.2016).

2.INFRASTRUCTURE

- Electrical machines laboratory, Control, Measurement and Instrumentation laboratory, Power Electronics laboratory, Electric circuits and Electronic devices laboratory, Research and Development laboratory and Power System Simulation Laboratory are equipped with machineries, components, signal generating, power supply measuring, recording instruments and computer systems costing Rs.2 crores. The total built up area of laboratories is 1208.21 sq.m.
- Latest softwares on Power system analysis, Power system stability, Power world simulator and Power electronics are available to study, solve, design and simulate research on Power system and Power Electronics problems to experience the real time results.
- All the class rooms are equipped with computer systems, LCD and OHP to promote the Teaching-Learning process more effectively.
- Separate library facility for EEE students with more than two thousand books on core subjects and hard copies of IEEE Journals and magazines from 1999 are available for reference. Staff and students can access the softcopy of Journals, proceedings published by IEEE, Elsevier, ASME, Springer, Mc Graw Hill.
- All laboratories are provided with sufficient computing facilities, printing facility with internet connection to simulate laboratory experiments.

3.STAFF

- Teams of well qualified, and experienced 31 faculties with cadre ratio as per AICTE, are guiding the students to attain the best educational objectives.
- Excellent research environment promotes the staff and students to participate, present and publish their research works in the National/International Journals and National/International conferences.
- Facility and experienced faculty available for guiding Ph.D.scholars.
- Staff development Programme / Faculty development programme / Workshop/ Seminar are organized regularly to share the knowledge of our experienced faculty with parent institution and other colleges staff and students and Industrial persons.

4.RESEARCH AND DEVELOPMENT

- The Research and Development section is doing research on Industrial Power Harmonics and mitigation and interact with industries in measuring, recording, analyzing and designing of filters for reducing harmonics with the help of Power Quality analyzer, as per IEEE standard.
- Consultancy work on 'Industrial Harmonic Study' and 'Energy Audit' is being carried out regularly by the experienced professors.

5.STUDENTS

- Students secured 99 University Ranks in B.E.-EEE (1998 to 2016) and 17 University Ranks in M.E.-Power Systems Engineering (2007 to 2016) with **Gold medal** in 2000 (UG - EEE) and in 2011 (PG – Power Systems Engineering). Sweety Jain of 2005-2009 batch student secured 2nd rank in Anna University Examination in 2009 among 8500 students who completed degree and out of 240 Engineering colleges all over Tamil Nadu.
- IEEE student's chapter which was started in the year 1999, continuously conducting number of student technical programme. Guest lecturers from industries have been arranged periodically to promote Industry-Institute Interaction and to bridge the gap between curriculum and latest trend in industry. The college received appreciation award for IEEE Student Chapter Activities from IEEE, Madras Section for the year 2015 and 2016. The EEE department recognized as IEI Best Division Award for the Academic year 2016-2017.
- To promote innovation, latest trends in industry and employability skills, student's professional activities are conducted every year in the name of symposium and conferences.
- Workshop/Seminar is regularly conducted for students to meet out the curriculum objectives.
- Inplant trainings are arranged for second and third year students to have hands on training with industry. Industrial visits are arranged every semester to know about the various process taking places in industry.
- Placement oriented training programme were conducted every semester right from the first year to develop soft skills, attitude, aptitude, self confidence, communication skills, interview skills etc, so as to face the campus placement programme organized by the college. Professional Trainers from software companies, Bangalore, Chennai are being invited for such training programme.

K.L.N. COLLEGE OF ENGINEERING, POTTAPALAYAM – 630 612

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

FACULTY LIST

S.No.	Name of the Faculty	Designation	Mobile No.	Email id
1.	Dr.S.M.Kannan	Professor & Head	9442035859	smkeeeklnce@gmail.com
2.	Dr.S.Venkatesan	Professor	9790672188	vensenn@yahoo.com
3.	Dr.K.Gnanambal	Professor	-	gnans_balu@rediffmail.com
4.	Dr. S.Parthasarathy	Professor	9443402901	sarathy_sps@yahoo.co.in
5.	Dr. S.Venkatanarayanan	Professor	9677320576	venjey@yahoo.co.uk
6.	A.Marimuthu	Associate Professor	9865002712	marimuthu_a@yahoo.com
7.	P.Loganthurai	Associate Professor	9952112115	loganthurai@yahoo.co.in
8.	M.Jegadeesan	Associate Professor	9524499063	m_jegadeesan07@rocketmail.com
9.	Dr. C.Vimala Rani	Associate Professor	-	jaysanjayvim@gmail.com
10.	Dr.J.Sangeetha	Associate Professor	-	geetha_maniraj@yahoo.com
11.	S.Manoharan	AP(Sr.Gr.)	9715585524	sharpmano@yahoo.com
12.	M.Ganesh Kumari	AP(Sr.Gr.)	-	gnshkumari@gmail.com
13.	M.Jeyamurugan	AP(Sr.Gr.)	9600637578	jeyam3182@gmail.com
14.	Dr.A.P.S.Ramalakshmi	Assistant Professor	-	ramalakshmi.aps@gmail.com
15.	Dr.M.Maha Lakshmi	Assistant Professor	-	mmahalakshmi36@gmail.com
16.	K.R.Jeyavelumani	Assistant Professor	-	krjeya35@gmail.com
17.	M.Balamurugan	Assistant Professor	9677564275	murugan.bala10@gmail.com
18.	T.Gopu	Assistant Professor	9487059842	gopu70@gmail.com
19.	R.Jeyapandiprathap	Assistant Professor	9788671119	jprathap03@gmail.com
20.	S.Rajalingam	Assistant Professor	9790248476	rajalingamrcet@gmail.com
21.	N.Vimal Radha Vignesh	Assistant Professor	9894965475	nvimalvignesh@gmail.com
22.	A.Manoj	Assistant Professor	9487526428	manojhails@gmail.com
23.	R.C.Hemesh	Assistant Professor	9443675916	kirthihemesh@gmail.com
24.	Dr. S.P.Rajaram	Assistant Professor	9786614484	ramraja798@gmail.com
25.	V.Sindhu	Assistant Professor	-	savisindhu@yahoo.co.in
26.	R.Divya	Assistant Professor	-	divyaraajagopal@gmail.com
27.	R.Sridevi	Assistant Professor	-	sridevirs87@gmail.com
28.	M. Bharani lakshmi	Assistant Professor	-	bharanilakshmi.m@gmail.com

PLACEMENT ACTIVITY – REMINDER

1. In the month of October every first year students must fill forms online in TATA CONSULTANCY SERVICES (TCS) campus recruitment using **nextsteptcs.com** website and must submit the following documents in the department.
   a. SSLC and HSC mark sheet photo copy at least 5.
   b. Latest passport size Photo at least 5.
   c. Current address proof with parent contact cell numbers.
   d. Create your own two E-mail id using Gmail.
   e. Resume with Scanned copy of passport size Photo.
   f. CT number registered in the TCS website.
2. Every semester end update CGPA in your resume and TCS profile.
3. An Engineering student from Electrical and Electronics Engineering should complete the following courses in order to enhance their software skills. This will be most helpful during their successful completion in Curriculum during 4th Semester and in the software company campus recruitment.
   a. Should complete **C Programming** before joining **2nd Semester**.
   b. Should complete **C++ Programming** before joining **3rd Semester**.
   c. Should complete **JAVA Programming** before joining **4th Semester**. (for the successful completion of object oriented Programming theory paper and laboratory during 4th Semester)
4. An Engineering student from Electrical and Electronics Engineering should complete the **Micro Processor, Micro Controller and Embedded Systems** courses before joining **5th Semester** in order to enhance their Hardware skills. This will be most helpful during their successful completion in Curriculum from 5th to 6th Semester and in the Core company campus recruitment. (for the successful completion of Micro Processor and Micro Controller theory as well as laboratory during 5th Semester and Embedded Systems during 6th Semester)
5. From 6th Semester Summer vacation onwards all should prepare for GATE Examination because all Engineering students from Electrical and Electronics Engineering should appear GATE Examination in order to settle in their life by pursuing higher education in the reputed colleges like IIT, NIT and Anna University or else to join as a Graduate Engineer trainee in a public sector companies like IOC, BHEL, PGCI etc.,
6. Before joining 7th Semester all should get any international certification programme course like OCJP, CCNA, etc., and upload the certification details in TCS campus commune website. This will be most helpful during the TCS campus and other MNC company recruitment.

Activity	Semester							
	1	2	3	4	5	6	7	8
TCS Online form Filling in nextsteptcs.com	In the month of October							
Documents to be submitted in the EEE Department/ Placement Coordinator	a. SSLC and HSC mark sheet photo copy at least 5. b. Latest passport size Photo at least 5. c. Current address proof with parent contact cell numbers. d. Create your own two E-mail id using Gmail. e. Resume with Scanned copy of passport size Photo. f. CT number registered in the TCS website.							
Updating CGPA in resume and TCS online profile	✓	✓	✓	✓	✓	✓	✓	✓
C Programming	✓	✓						
C++ Programming		✓						
JAVA Programming			✓					
Micro Processor & Micro Controller				✓				
Embedded Systems					✓			
GATE / UPSC/ TNPSC Preparation			✓	✓	✓	✓	✓	
International Certification – OCJP / CCNA						✓	✓	

GENERAL REMINDERS

I. General

1. Keep at least 5 photocopies of birth certificate, ration card, Voters ID card, College ID card,Aadhar card, 10th ,+2 mark sheets, 10th /+2 Transfer Certificates,[* all proofs to be kept in your bag, in your house and in your mail, all kept in a water proof file-remember Chennai flood]. This will be required at anytime, anywhere.

2. Apply for Savings Bank account in any of the nationalized banks in first year. Apply for LIC schemes, saving schemes right from the first year. [*Refer]

3. Get Driving license during third year of your Degree course [*Refer]

4. Get Passport before the completion of 6th semester. [*Refer]

5. Always keep ID card issued by competent authority while moving from one city to another/ one state to another. It is better to wear ID card always.(except during bathing).

6. Never share your username and password of mail accounts to anyone even in your home/ to teachers/ friends. Never reply to un trusted mail/fake messages.

7. Share only legal, ethical, non-political, educational value based information/ photos/videos with your friends or any others through social media. Posting of illegal/political/unethical/ information/comments will spoil your career. Remember that all such communications in social media/mails are continuously monitored and recorded by intelligent agencies in the country and abroad, due to security threats.

8. Don't involve teasing of students of your class, juniors or seniors in the classrooms, laboratories or in hostels. Don't loan the cell phone to anyone. Also don't keep your cell phone easily accessible by anyone.

9. Don't send obscene messages or pictures through cell phones/ internet to anyone. Defaulters will be easily tracked by Cyber Crime Agencies. Don't purchase/loan someone's laptop/mobile phone, due to theft complaints.

10. Avoid two wheeler riding for long travelling, and night travelling. Wear helmet. Follow traffic rules. Lot of accidental deaths reported due to negligence of traffic rules. About 1.5lakhs of people lost their life in accidents in our country every year.

11. For any transaction of money, use cheques or bank accounts(for more than Rs. 10,000/-) because finding fake notes is difficult.

12. Always keep 10 passport and stamp size photographs, 10 no.s of revenue stamps, all ID proofs whenever going for banks/pass port office.

13. Keep at least email ids and good friendship of 25 students of your branch who have been placed in different companies. Collect background information on core/IT companies(minimum 25)

14. Develop good reading habit/read News papers daily/watch news channel daily/Watch films nominated for Oscar award.Watch channels like Discovery/Nat Geo/History/ any other news channels.(not more than an hour)

15. Speak in English only. Develop good writing skills by reading books.

16. Have a Desk top/Laptop, Printer before entering 5th semester.

17. Have internet facility in home for educational purpose. Keep all NPTEL material.

18. Keep all kind of stationary in your table for use at any time [pencil, sharpener, eraser, ball point pen of different colours, sketches, bell clip, stapler, single punch, tag, gum, knife,scissors,A4 paper, cello tap, emergency lamp, scale, protractor, compass, pen drive, CD, whitener, calculator, diary, stapler pin box]

19. Never transfer/ deposit money to any unknown mail. Beware of fraud/cheating by any one.

II. Education:

20. Download Anna University examination results immediately after the publication of result from AU website. Mark sheet attestation will not be given without the above copy

21. Always keep 5 copies of AU mark sheets , of each semester. Post it on your mail.

22. Discrepancy in mark sheets such as Name, Date of Birth, CGPA awarded, register number should be corrected immediately.

23. Always keep Rs 5,000/- in a semester for the payment of Book fee/AU exam fee/Training fee/purchase of competitive exam books/Educational tour/seminar/additional course/ certification course etc. Educate your parents for the above. This may be required in a particular month or in several months spread in a semester.

24. Enroll in IEEE membership during first/second year. Attend at least one programme at Chennai.

25. Collect 5 sets of AU question papers, subject wise, in a semester(within 10 days)

26. Prepare good quality Resume. Consult TPO, placed final year students. Resume preparation is an art that ensures your quality and getting jobs in reputed concern. Update your resume, monthly (by attending value added courses, online courses, co-curricular and extracurricular activities, publishing articles in conferences, symposium, technical events, journals, News papers, inplant training, internship, new languages learnt, project developed, industrial visits, social services participated etc.)

27. Attend any courses after consulting with HOD/senior staff to avoid courses not suited to your branch.

28. Purchase text/reference books every semester.

29. Purchase competitive exam books , like Objective type QB,GATE/TANCET/IES/IAS and prepare for the exams from second year onwards.

30. Collect aptitude/reasoning/analytical/numerical/verbal/test questions from the placed students or download from the website. For successful placement, preparation from the first year in the above topics is required.

31. Collect information like Product, clients, branches, head office, annual turnover, GM,CEO, etc of 25 core companies, and 25 software companies.

32. Attend atleast one seminar/workshop/ paper presentation contest per semester, applicable to your branch of study.

33. Plan your study for current subject/assignment work/observation work/record work/aptitude training for technical /non-technical daily/weekly/monthly.

34. Decide & justify clearly, your objective before 6th semester and plan accordingly. Options are placement(ON/OFF) in core/IT companies, higher studies/ civil services , parents business , start your own business. Confused mind never take a decision.

35. Attend inplant training(Min:one week,Max:One month) during semester holidays. Avoid industrial visit (Energy waste) and educational tour (Money waste).

36. Do mini project in second, third year of your study .Update these in final year. Project should be based on the need of the society/industry.

III. Health

37. Health is wealth. Read Dalailama statement on life of a man. We work hard , earn and save money sacrificing our health. Later we spent lot of money for medical treatment due to poor healthcare.

38. Have regular exercise either in the forenoon/evening. (an hour walk is must everyday).

39. Your food habits decides what you are and how long you will live with peace. Avoid junk foods/road side eatery. Use hot water for drinking.

40. Consult doctors in case of health problems. Periodical medical checkup, once in 6 months, is necessary for health and dental care. This may require Rs.2,000/- per year. Otherwise you need to pay a lot. It is advisable to stay in a house, within 500 metre (walkable distance) from a multispecialty hospital, otherwise 250 meters from any hospital. This is required to tackle emergency situations and also to avoid paying more for transport.

41. Avoid roaming/walking during summer/rainy season.

42. Attend yoga classes/ do meditation.

43. Apply group insurance medical policy at the age of 20.

44. Follow ethics and be Nationalistic.

Developing Leadership Skills

No one is a born leader; everyone can develop leadership skills and everyone can benefit from using them. First, take time to honestly analyze yourself. Learn to understand yourself. It's the first step to understanding others. Consider these important questions:

1. What kind of leader am I? One who helps to solve problems? A leader who helps people get along? How do others see me as a leader?
2. What are my goals, purposes, and expectations in working with this particular group?
Identify areas for improvement.

Ask yourself these questions:
1. Do I try to be aware of how others think and feel?
2. Do I try to help others perform to the best of their abilities?
3. Am I willing to accept responsibility?
4. Am I willing to try new ideas and new ways of doing things?
5. Am I able to communicate with others effectively?
6. Am I a good problem solver?
7. Do I accept and appreciate other perspectives and opinions?
8. Am I aware of current issues and concerns on campus or in my community?
Then after analyzing your strengths and weaknesses -- take action
Devise a strategy for upgrading your skills. Here are a few strategies to consider:

1) Communicate effectively:
Effective communication is dialogue. Barriers are created by speaking down to people, asking closed questions that elicit yes or no answers, using excessive authority, and promoting a culture that depends on unanimity. If your focus is winning the argument or if you react defensively to criticism, you'll create fear of openness and hinder the organization's growth.
Try these steps to effective communication:
• Listen actively - ask open questions. Be genuinely interested in what other's say.

• Thank people for their openness -- stress how much you value it -- even if you don't like specifically what is being said.
• Point to areas of agreement before jumping on areas of disagreement - this reduces defensiveness; members wont fear being "attacked."
• Set aside your authority to create an atmosphere of partnership to reduce fear in group members.
• Promote a culture of constructive dissent - though not to the point of paralysis.
• Portray disagreement as simply a difference of opinion. Get rid of the "I'm right, you're wrong" attitude.

2) Encourage enthusiasm and a sense of belonging. Show:
• Friendliness: others will be more willing to share ideas if you're interested in them as people too.
• Understanding: everyone makes mistakes. Try to be constructive, tolerant and tactful when offering criticism.
• Fairness: equal treatment and equal opportunity lead to an equally good effort from all group members.
• Integrity: members will take tasks more seriously if you show that you're more interested in group goals than your own personal gain.

3) Keep everyone working toward agreed upon goals:
• Remind everyone of the group's purposes from time to time. It's easy to become too narrowly focused and lose sight of the larger goals.
• Provide encouragement and motivation, by showing your appreciation for good ideas and extra effort.
• Harmonize differences and disagreements between group members by stressing compromise and cooperation.
• Involve everyone in discussions and decisions, even if asking for opinions and ideas means a longer discussion.

4) Get to know the people around you Everyone has different abilities, wants, needs, and purpose in life.
To get along with others and get results, you need to get to know them.
• Interact with group members as often as possible. The only way to get to know someone is through direct personal contact.
• Become familiar with every member of your group. Take note of each person's unique qualities and characteristics.

5) Treat others as individuals
Put your knowledge and understanding of each group member to work!
• Be aware of expectations. Everyone expects something different: recognition, a chance to learn, a chance to work with other people, etc.
• Be creative. A repetitious routine can cause boredom. A successful leader thinks of new and better approaches to old ways of doing things.
• Provide rewards. Recognition by the group is a source of personal satisfaction and positive reinforcement for a job well done.
• Delegate responsibilities. If everyone shares the work, everyone can share pride in the group's accomplishments. Let each member know what's expected of him/her, available resources, deadlines, etc.

6) Accept responsibility for getting things done
• Take the initiative. Why stand around and wait for someone else to get things started? Set an example.
• Offer help and information. Your unique knowledge and skills may be just what's needed.

• Seek help and information. Ask for advice if you need it. This will encourage group involvement and help accomplish group goals.
• Make things happen. By being decisive, energetic, and enthusiastic, you can and will help get things done!
• Know when and how to say "no." If your time and resources are already committed, turn down extra tasks, but do it nicely.

7) Problem solve in a step - by-step way

Whether you are faced with a decision to make or a conflict to resolve, following a logical approach will help.

1. State the problem as simply and clearly as possible.
2. Gather all relevant information and available resources.
3. Brainstorm as many ideas or solutions as you can think of (with others if possible).
4. Evaluate each idea or solution and choose the best one.
5. Design a plan for using your idea or solution. Include a timetable, assigned roles, and resources to be used.
6. Follow up on your plan by asking if your idea worked and why or why not.

Tips for Effective Communication

Have courage to say what you think. Be confident in knowing that you can make worthwhile contributions to conversation. Take time each day to be aware of your opinions and feelings so you can adequately convey them to others. Individuals who are hesitant to speak because they do not feel their input would be worthwhile need not fear. What is important or worthwhile to one person may not be to another and may be more so to someone else.

Practice. Developing advanced communication skills begins with simple interactions. Communication skills can be practiced every day in settings that range from the social to the professional. New skills take time to refine, but each time you use your communication skills, you open yourself to opportunities and future partnerships.

Make eye contact. Whether you are speaking or listening, looking into the eyes of the person with whom you are conversing can make the interaction more successful. Eye contact conveys interest and encourages your partner to be interested in you in return.

Use gestures. These include gestures with your hands and face. Make your whole body talk. Use smaller gestures for individuals and small groups. The gestures should get larger as the group that one is addressing increases in size.

Manifest constructive attitudes and beliefs. The attitudes you bring to communication will have a huge impact on the way you compose yourself and interact with others. Choose to be honest, patient, optimistic, sincere, respectful, and accepting of others. Be sensitive to other people's feelings, and believe in others' competence.

Develop effective listening skills: Not only should one be able to speak effectively, one must listen to the other person's words and engage in communication on what the other person is speaking about. Avoid the impulse to listen only for the end of their sentence so that you can blurt out the ideas or memories your mind while the other person is speaking.

Enunciate your words. Speak clearly and don't mumble. If people are always asking you to repeat yourself, try to do a better job of articulating yourself in a better manner.

Pronounce your words correctly. People will judge your competency through your vocabulary. If you aren't sure of how to say a word, don't use it.

Use the right words. If you're not sure of the meaning of a word, don't use it. Grab a dictionary and start a daily habit of learning one new word per day. Use it sometime in your conversations during the day.

Slow your speech down. People will perceive you as nervous and unsure of yourself if you talk fast. However, be careful not to slow down to the point where people begin to finish your sentences just to help you finish.

All India Installed Capacity (in MW) of Power Stations

This is a **list of states and territories of India by installed capacity of power utilities** with electricity generation mode break-up as on **31 January 2017** with figures in Megawatts.

INSTALLED CAPACITY (IN MW) OF POWER UTILITIES IN THE STATES/UTS LOCATED IN SOUTHERN REGION

INCLUDING ALLOCATED SHARES IN JOINT & CENTRAL SECTOR UTILITIES

(As on 31.01.2017)

State	Ownership / Sector	Modewise breakup							Grand Total
		Thermal				Nuclear	Hydro (Renewable)	RES (MNRE)	
		Coal	Gas	Diesel	Total				
Andhra Pradesh	State	3085.91	235.40	0.00	3321.31	0.00	1808.87	89.50	5219.68
	Private	3650.00	3074.11	16.97	6741.08	0.00	0.00	3660.99	10402.07
	Central	1540.30	0.00	0.00	1540.30	127.16	0.00	0.00	1667.46
	Sub-Total	**8276.21**	**3309.51**	**16.97**	**11602.69**	**127.16**	**1808.87**	**3750.49**	**17289.22**
Telangana	State	5406.59	0.00	0.00	5406.59	0.00	2245.66	0.00	7652.25
	Private	270.00	1570.89	19.83	1860.72	0.00	0.00	1230.21	3090.93
	Central	1799.88	0.00	0.00	1799.88	148.62	0.00	0.00	1948.50
	Sub-Total	**7476.47**	**1570.89**	**19.83**	**9067.19**	**148.62**	**2245.66**	**1230.21**	**12691.68**
Karnataka	State	4220.00	0.00	127.92	4347.92	0.00	3599.80	155.33	8103.05
	Private	2060.00	0.00	25.20	2085.20	0.00	0.00	5949.21	8034.41
	Central	2028.46	0.00	0.00	2028.46	475.86	0.00	0.00	2504.32
	Sub-Total	**8308.46**	**0.00**	**153.12**	**8461.58**	**475.86**	**3599.80**	**6104.54**	**18641.78**
Kerala	State	0.00	0.00	159.96	159.96	0.00	1881.50	145.02	2186.48
	Private	0.00	174.00	0.00	174.00	0.00	0.00	119.36	293.36
	Central	1073.69	359.58	0.00	1433.27	228.60	0.00	0.00	1661.87
	Sub-Total	**1073.69**	**533.58**	**159.96**	**1767.23**	**228.60**	**1881.50**	**264.38**	**4141.71**
Tamil Nadu	State	4660.00	524.08	0.00	5184.08	0.00	2203.20	122.70	7509.98
	Private	2950.00	503.10	411.70	3864.80	0.00	0.00	10249.07	14113.87
	Central	4255.10	0.00	0.00	4255.10	986.50	0.00	0.00	5241.60
	Sub-Total	**11865.10**	**1027.18**	**411.70**	**13303.98**	**986.50**	**2203.20**	**10371.77**	**26865.45**
NLC	State	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Central	100.17	0.00	0.00	100.17	0.00	0.00	0.00	100.17
	Sub-Total	**100.17**	**0.00**	**0.00**	**100.17**	**0.00**	**0.00**	**0.00**	**100.17**
Puducherry	State	0.00	32.50	0.00	32.50	0.00	0.00	0.00	32.50
	Private	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03
	Central	249.32	0.00	0.00	249.32	52.78	0.00	0.00	302.10
	Sub-Total	**249.32**	**32.50**	**0.00**	**281.82**	**52.78**	**0.00**	**0.03**	**334.63**
Central - Unallocated		1643.08	0.00	0.00	1643.08	300.48	0.00	0.00	1943.56
Total (Southern Region)	State	17372.50	791.98	287.88	18452.36	0.00	11739.03	512.55	30703.94
	Private	8930.00	5322.10	473.70	14725.80	0.00	0.00	21208.87	35934.67
	Central	12690.00	359.58	0.00	13049.58	2320.00	0.00	0.00	15369.58
	Grand Total	**38992.50**	**6473.66**	**761.58**	**46227.74**	**2320.00**	**11739.03**	**21721.42**	**82008.19**

'*'Renewable Energy Sources (RES) includes small hydro projects, wind, solar, tidal, biomass and urban & industrial waste power.

GOVERNMENT OF INDIA

MINISTRY OF SKILL DEVELOPMENT AND ENTERPRENEURSHIP

DIRECTORATE GENERAL OF TRAINING

ADVANCED TRAINING INSTITUTE

(AN ISO 29990 : CERTIFIED)

Guindy, CHENNAI, Tamilnadu

Phone : 044-22501211/0252Fax : 044-22501460, Email : atichn@vsnl.com,atichn@yahoo.com, Url : www.atichennai.org.in

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ATI Chennai : Regular Course Training Schedule

Advanced Vocational Training Scheme (AVTS) - Short Term Programme

Annual Training calendar 2017 – 2018

(Short Term Skill Training Programme)

	Course Code	Course Title	Duration (Week)	Date	
				From	To
GROUP:1	**ELECTRICAL CONTROL MAINTENANCE**				
	01.01	Protective Relays , Circuit Breakers, & Switch Gear Protection	01	03-04-2017	07-04-2017
				15-05-2017	19-05-2017
				05-06-2017	09-06-2017
				10-07-2017	14-07-2017
				21-08-2017	25-08-2017
				09-10-2017	13-10-2017
				13-11-2017	17-11-2017
				18-12-2017	22-12-2017
				29-01-2018	02-02-2018
				19-02-2017	23-02-2017
	01.02	Operation and Maint. Of Power Transformers	01	17-04-2017	21-04-2017
				12-06-2017	16-06-2017
				17-07-2017	21-07-2017
				04-09-2017	08-09-2017
				23-10-2017	27-10-2017
				20-11-2017	24-11-2017
				01-01-2018	05-01-2018
				05-02-2018	09-02-2018
				26-02-2017	02-03-2017
				19-03-2017	23-03-2017
	01.03	Operation & Control of Industrial AC / DC Motors	01	24-04-2017	28-04-2017
				22-05-2017	26-05-2017
				19-06-2017	23-06-2017
				24-07-2017	28-07-2017
				28-08-2017	01-09-2017
				18-09-2017	22-09-2017
				31-10-2017	03-11-2017
				04-12-2017	08-12-2017
				08-01-2018	12-01-2018
				05-03-2018	09-03-2018
	01.04	Electrical Safety at Work Place and First Aid	01	01-05-2017	05-05-2017
				29-05-2017	02-06-2017
				03-07-2017	07-07-2017
				07-08-2017	11-08-2017
				11-09-2017	15-09-2017
				06-11-2017	10-11-2017
				04-12-2017	08-12-2017
				15-01-2018	19-01-2018
				12-02-2018	16-02-2018
				12-03-2018	16-03-2018

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GROUP:1	**ELECTRONIC CONTROL MAINTENANCE**			
Course Code	Course Title	Duration (Week)	**Date**	
			From	To
02.01	Power Electronics and its Industrial Applications	01	03-04-2017	07-04-2017
			05-06-2017	09-06-2017
			02-10-2017	06-10-2017
			04-12-2017	08-12-2017
			19-02-2018	23-02-2018
02.02	8051 Programming & Applications	01	10-04-2017	14-04-2017
			12-06-2017	16-06-2017
			31-07-2017	04-08-2017
			21-08-2017	25-08-2017
			09-10-2017	13-10-2017
			11-12-2017	15-12-2017
			26-02-2018	02-03-2018
02.03	PIC Micro Controller Programming & Applications	01	24-07-2017	28-07-2017
			25-09-2017	29-09-2017
02.04	Siemens S7-400 PLC Step-7 (Level-1)	01	17-04-2017	21-04-2017
			19-06-2017	23-06-2017
			07-08-2017	11-08-2017
			16-10-2017	20-10-2017
			18-12-2017	22-12-2017
			04-09-2017	08-09-2017
			05-03-2018	09-03-2018
02.05	Computer Hardware maintenance & Net Working	01	24-04-2017	28-04-2017
			26-06-2017	30-06-2017
			11-09-2017	15-09-2017
			23-10-2017	27-10-2017
			25-12-2017	29-12-2017
			05-02-2018	09-02-2018
			12-03-2018	16-03-2018
02.06	Siemens S7-400 PLC Programming (TIA PORTAL) (Level-1)	01	01-05-2017	05-05-2017
			29-05-2017	02-06-2017
			03-07-2017	07-07-2017
			18-09-2017	22-09-2017
			30-10-2017	03-11-2017
			01-01-2018	05-01-2018
			19-03-2018	23-03-2018
02.07	Siemens PLC-S7-1200 & Drive for Position Control Applications	01	08-05-2017	12-05-2017
			10-07-2017	14-07-2017
			06-11-2017	10-11-2017
			08-01-2018	12-01-2018

List of PSUs through GATE Exam

Name of PSU	Eligible Branches	Name of PSU	Eligible Branches	Name of PSU	Eligible Branches
ONGC Ltd.	XE, GG	MDL	ME, EE	NLC	ME, EE, EC, IN, MN, CE
NHPC Limited	EE	PSPCL Ltd	ME, EE, EC, IN, CE, CS	NALCO	ME, EE, EC, IN, MT, CE, MN, CS, CH
BPCL Limited	ME, EE, CH, IN, CE	OPGC Ltd	ME, EE, CE, C & I	RITES	CE, ME
CEL	EC, ME, EE, XE	IRCON International Ltd	EC, EE, IN	NPCCL	CE
Coal India Ltd.	ME, EE, MN, GG	BNPM	ME, EE, EC, CH	MECL	ME, CY, GG
POWERGRID	EE, CE, CS	AAI	EC, EE	NBCC Ltd.	CE
Indian Oil	CH, CE, CS, EE, EC, GG, IN, ME, MT, MN	BBNL	EC, EE, CS	PAPCL	EE, EC, ME, IN, CS
THDC India Ltd	ME, EE, CE	NFL	EE, CS, CH, IN, XE		
HPCL	ME, EE, CE, IN, CH, EC	GSECL	EE, ME, MT, C & I		
NTPC Limited	ME, EC, EE, IN	GAIL	ME, EE, IN, CH		

Lists of TOP 10 software companies to offer jobs in India

S. No.	Name of the Company	About the company	Head quarters	Revenue	No. of Employees	Website
1.	**Tata Consultancy Services**	TCS was established in 1968 and is spread across 47 countries.	Mumbai, India	US$ 13.44 billion	300,464	www.tcs.com
2.	**Cognizant Technology Solutions**	CTS was founded in year 1994 by Srilankan American Kumar Mahadeva.	Teaneck, New Jersey, United States	US$ 8.84 billion	178,000	www.cognizant.com
3.	**Infosys**	Infosys was founded in year 1981.	Bangalore, Karnataka	US$ 8.4 billion	160,405	www.infosys.com
4.	**Wipro**	Azim Premji is the Chairman & TK Kurien is the CEO of Wipro.	Mumbai, India	US$7.3 billion	146,053	www.wipro.com
5.	**Tech Mahindra**	Tech Mahindra was founded in year 1986	Mumbai	$4.09 billion	89,500	www.techmahindra.com
6.	**HCL Technologies**	HCL was founded by Shiv Nadar in year 1991.	Noida, Uttar Pradesh	US$335 million	90,190	www.hcltech.com
7.	**iGate**	iGate was earlier known as Patni Computer Systems and was founded by Narendra Patni and his wife.	Bridgewater, New Jersey, U.S	US$ 1.15 billion	31,000 +	www.igate.com
8.	**Mphasis**	MPhasis was founded by Jaithirth Rao in year 2000	Bangalore, India	US$1.0 billion	45,426 +	www.MphasiS.com
9.	**Larsen &Toubro Infotech**	L & T Infotech was founded in year 1997	Mumbai	US$ 650 million	16,000+	www.lntinfotech.com
10.	**Oracle Financial Services Software Limited**	Oracle Financial Services Software Limited was earlier know as i-Flex Solutions Limited. It is spread across 130 countries around the globe and provides the IT solutions to the financial companies.	Mumbai, India	US$610 million	9,682	www.oracle.com

Lists of TOP 10 core companies to offer Electrical jobs

1 | Bharat Heavy Electricals Ltd.
Corporate office – New Delhi, India | **Establishment** – 1964 |
Business – Electrical equipments | **Website** – *www.bhel.com* |

Bharat Heavy Electricals Ltd established in the year 1964 is a leading power plant equipment manufacturer and has expertise in engineering, manufacture, construction, testing, designing and servicing of various products of the core sectors such as defense, power, industries etc. BHEL is among the top electrical companies in India and which has total 16 manufacturing divisions and four regional offices. It is currently operating more than 150 project sites across India and abroad.

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2 | Alstom
Corporate office – Levallois-Perret, France | **Establishment** – 1928 |
Business – Power generation and transmission | **Website** – *www.alstom.com* |

Alstom a multinational corporation is one of the best electrical companies in India and world, operating in hydroelectric power transportation and generation and it is active in many core industry sector. Company has a workforce of 9000+ employees in India and over 85000+ worldwide.

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3 | ABB
Corporate office – Zürich, Switzerland | **Establishment** – 1988 |
Business – Electrical equipments | **Website** – *www.abb.com* |

ABB holds interests in robotics and mainly in the automation and power areas. ABB is active in the field of electricity grids manufacturing and other technologies in the field of automation and power. ABB is one of the few giant electrical player at global level and among the largest engineering company in the world.

4| Siemens
Corporate office – Erlangen, Germany | **Establishment** – 1847 |
Business – Renewable energy, Power generation & transmission| **Website** – *www.energy.siemens.com* |

Siemens a German conglomerate is rated one the finest electrical company in India. Company's product line includes generators, steam turbines, compressors, high-voltage switching products and many more. Siemens employees more than 86000 people worldwide and it is a leading supplier of energy related products worldwide.

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5 | Crompton Greaves
Corporate office – Mumbai, Maharashtra | **Establishment** – 1878 |
Business – Electrical | **Website** – *www.cgglobal.com* |

Crompton Greaves is a part of Avantha Group which is headquartered in Mumbai. CGL deals in manufacturing, marketing and designing of power transmission and generation related products. CGL has manufacturing units in Canada, France, Hungary, UK, US, Indonesia, Ireland, India and Belgium.

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6 |Bajaj Electricals Ltd.
Corporate office – Mumbai, Mharashtra | **Establishment** – 1938 |
Business – Electrical Appliances | **Website** – *www.bajajelectricals.com* |

Bajaj Electricals is a leader in the field of electrical equipment and headquartered in Mumbai. It is one of the top 5 electrical companies in India having 19 branch offices across India. Bajaj Electricals provides

complete range of consumer durable such as fan, electrical appliances, lighting which includes tubes, lamps etc.

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7 | Eason Reyrolle
Corporate office – Bangalore, Karnataka | **Establishment** – 1986 |
Business – Electric Equipments & Industrial Consumables | **Website** – *www.easunreyrolle.com* |

Established in 1980 Easun Reyrolle is a Power Management Products, Transmission, Distribution & Industrial Application, Systems, Solutions and Services provider having significant presence in global market as reputed electrical products manufacturer.

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8 | Schneider Electrical
Corporate office – Rueil Malmaison, France | **Establishment** – 1981 |
Business – Electric Equipment | **Website** – *www.schneider-electric.co.in* |

Schneider Electric a French company established in the year 2000 is among the top electrical companies in India which is involved in energy management. Company has a workforce of more than 17000 employees and has 31 global manufacturing Plants.

9| Wipro Lighting
Corporate office – Pune, Maharashtra | **Establishment** – |
Business – Lamps, Luminaires and Accessories | **Website** – *www.wiprolighting.com* |

Wipro lightings a part of Wipro group and a leading electrical company in India producing Lamps, luminaries and accessories. Company's product portfolio comprises of high end lighting control and architectural dimming system, high intensity discharge lamp Luminaries, brightness management lighting products etc.

10| Kelvin Electrical
Corporate office – Al-Ain, U.A.E | **Establishment** – 2005 |
Business – | **Website** – *www.kelvin-electrical.com* |

Kelvin Electrical LLC founded in 2005 is based in United Arab Emirates (UAE). Kelvin Electrical deals in Cable Management Systems, Interior, Architectural, Exterior and Special lighting, Cable Support Systems, Raised Floor, Wiring Accessories etc.

K.L.N. COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Lists of core companies to offer Electrical jobs in India

Types of Electrical Core Companies

1. **Electrical motors and Generators**
2. **Consultancy (Electrical Engineering)**
3. **Electrical appliances**
4. **Electrical components companies**
5. **Lighting & luminaries**
6. **Power Generation**
7. **Electric wires & Cables**
8. **Electrical exporters**
9. **Measurements & Instrumentation**
10. **Power Distribution**
11. **Transformers**
12. **Green Energy Companies in India**
13. **Internationally renowned MNC'S**
14. **Top 20 core companies in India to offer electrical jobs**
15. **Exclusive Government jobs for Electrical Engineers**

Electrical motors and Generators

1. Ajay Engineers http://www.ajayengineers.com
2. All India Electric Motor Manufacturers' Association http://www.aiemma.com/
3. Aqua Brand Submersible Sewage Pump http://www.aquapumps.com
4. Compact http://www.compactlighting.net
5. Crown Electric Company http://www.crown-gear.com
6. Lawkim http://lawkimindia.com/
7. MMC Electric Company http://www.dynafluxindia.com
8. MS Enterprises and Trimega Power Corporation http://www.msein.com
9. National Electrical Industries - Ahmedabad. http://www.elmomachines.com/
10. Numeric Power Systems http://www.numericups.com
11. Pranshu Electricals http://www.pranshuelec.com/
12. Reva Industries http://www.reva.com/
13. Rotomag Motors & Controls Pvt. Ltd. http://www.rotomag.com
14. Rudrashakti Electronics http://www.rudrashakti.com
15. Sanjay Diesels - Diesel Generating Sets. http://www.dgsets.com/
16. Venus Industrial Corporation http://www.venusind.com/
17. A-One Industries. http://www.aoneindustries.com/contactus.html

Consultancy (Electrical Engineering)

1. APJ Projects http://www.apjprojects.com
2. Consolidated Consultants and Engineers Pvt. Ltd http://www.consolidatedconsultants.com
3. DSON Enterprises http://www.dsonenterprises.com
4. Eltech Engineers http://www.eltechindia.com/
5. John Mech-El Technologies (P) Ltd http://www.johnmech-el.com/
6. Mandvi Electric Works http://www.bicserve.com/

7. Miraj Instrumentation Services http://www.mirajinstrumentation.com
8. PG Associates http://www.engineeringconsultant.in
9. Power Gem Engineers - Consultants in Power Generation. http://www.powergem.com/
10. Secon Engineers http://www.seconindia.com
11. Shanti Enterprises Electricals Limited http://www.shantielectricals.com
12. Shashi Electricals http://www.shashielectricals.com
13. SK Systems http://www.sksystem.com
14. Tata Consulting Engineers http://www.tce.co.in
15. Nutronics India http://www.nutronicsindia.com/

Electrical appliances

1. Ajay Industrial Corporation http://www.ajayindustrial.com/
2. Ankit Electricals http://www.ankitelectricals.com
3. A.P.C. System & Products Pvt. Ltd http://www.apcsp.com
4. Arka Trading & Services http://www.mfdplaza.in
5. Bajaj Electricals Ltd - Part of Bajaj Group. http://www.bajajelectricals.com/
6. Electroil http://www.electroil.com/
7. Eveready Industries India Ltd http://www.evereadyindustries.com/
8. Graftec india http://graftec.trade-india.com
9. Indexelectronics http://www.indexelectronics.com
10. Khaitan Group http://www.khaitan.com/
11. Lloyd Electric & Engineering Limited http://www.lloydengg.com/
12. Modern Electrical Stores http://www.modernelectricalsindia.com/
13. Needo electronics and electricals pvt. Ltd. http://www.needoindia.com
14. Picasso home products http://www.picassoappliances.com/
15. Polor Industries Ltd http://www.polarinc.com/
16. Rajshree India Ltd. http://www.rajshreefans.com
17. Shilpa Electricals http://www.shilpaelectricals.com/
18. Super Impex http://www.superimpex.com
19. Tri Star Engineering Industries http://www.tristarengg.com
20. Vijay Electricals http://www.vijayelectricalspune.com/
21. Vxl Technologies Ltd. http://www.vxldesign.com
22. XtremeWorx http://www.xtremeworx.net

Electrical components companies

1. Ace Bimetalliks India Pvt. Ltd. http:// www.aceelectricals.com
2. Aditron India Pvt. Ltd. (Engineering Division) http://www.aiplen.com
3. Admir Ovens http://www.admir.com
4. Arvind Anticor Ltd http://www.picklingplant.com
5. Asiatic Electronic Industries. http://www.asiatic-india.com/
6. Axis Electrical Components India Pvt. Ltd. http://www.axis-india.com
7. Balar Marketing Pvt. Ltd http://www.allelectricalproducts.com/
8. Bhartia Industries Limited http://www.bchindia.com
9. Brass Copper & Alloy (I) Ltd. http://www.hexworldwide.com
10. Brightech Valves and Controls Pvt. Ltd. http://www.brightechvalves.com
11. Caltech Engineering Services http://www.caltechindia.com
12. Color Design India http://www.colordesigntech.com/
13. Consult Techniques (I) Pvt. Ltd http://www.consulttechnique.com/

14. Deki Electronics Ltd. http://www.dekielectronics.com
15. Elpro International Limited http://www.elproindia.com/
16. Elymer http://www.elymer.com
17. E S Electronics (India) Pvt. Ltd http://www.energysaversindia.com/
18. Finetech Engineering Corporation http://www.finetechindia.com
19. Gayatri Control, Ahmedabad http://www.gayatricontrol.com/
20. Gemscab Industries Ltd http://www.gemscab.com/
21. Hallmark Electronics http://www.hallmarkelect.com/
22. India International House Ltd http://www.builderhardware.com/
23. Jaykrishna magnetics pvt.ltd http://www.jkmagnetics.com
24. Leotech Group http://www.leotechindia.com/
25. Maxx Mobile Phone Accessories Pvt. Ltd http://www.maxmobile.co.in
26. Mehta Engineering Enterprise http://www.mehtaswitch.com
27. Mehta Tubes Ltd http://www.mehta-group.com/
28. Mellcon Engineers http://www.mellcon.com
29. Micromot Controls http://www.micromotcontrols.com
30. Muskaan Engineers http://www.electricitysaver.com/
31. Neelam Import Pvt. Ltd. http://www.cellking.org
32. Onload Gears http://www.onloadgears.com/
33. Orton Engineering Pvt. Ltd, Thane http://www.ortonengineering.com/
34. Persang Alloy Industries http://www.webmasterindia.com/persangalloy
35. PMT Engineers http://www.pmtengineers.com
36. Powercap Systems (Madras) Pvt. Ltd http://www.transformersindia.com/
37. Powertek Equipment Company http://www.powertekindia.com/
38. Pragati Electrocom Pvt. Ltd http://www.pragatielectrocom.com/
39. Pran Electronics Pvt. Ltd. http://www.pranelectronics.com
40. Precicraft Components India Pvt. Ltd http://www.precicraft.com/
41. Prima Automation India Pvt. Ltd http://www.prima-automation.com/
42. Rittal India Pvt Ltd http://www.rittal-india.com
43. Sanghi Yantra Udyog http://www.skyuindia.com/
44. SKN - Bentex Group of Companies. http://www.sknbentex.com/
45. South India Industrial Suppliers http://siis-india.com/bus_bar_support.html
46. Square Automation Pvt. Ltd http://www.squareautomation.com/
47. Sudhir Switchgears http://www.sudhirswitchgears.com
48. Syntron Controls http://www.syntron-controls.com
49. Torque Master Tools Pvt. Ltd http://www.torquemasterindia.com/
50. United Core http://www.unitedcores.com/
51. Utiliti Controls http://www.utiliticontrols.com/
52. valrack modular systems pvt.ltd http://www.valrack.com
53. Wavetronics http://www.wavetronicsindia.com
54. Rane Holdings Limited http://www.rane.co.in

Lighting & luminaries

1. A.K. Electricals http://www.akelectricals.com/
2. APCO India http://www.indiabizclub.net/Electrical/APCO_INDIA.html
3. Aquascape engineers http://www.fountainsnozzles.com
4. Arihant Enterprises : http://www.arihantsecurityindia.com/

5. Atlas Electricals www.indiabizclub.net/Electrical/ATLAS_ELECTRICALS.html
6. Baliga Lighting http://www.baliga.com/
7. Crompton Greaves Limited. http://www.cglonline.com/
8. Decon Lighting http://deconlighting.com
9. GE Lighting India http://www.gelighting.com/india/index.html
10. Jain Industrial Lighting Corporation http://www.indiamart.com/jilco/
11. Jayanta Lamp Industries Pvt.Ltd : http://www.jayantagroup.com
12. Kuber Lighting Pvt Ltd http://www.kuber.biz
13. Litray Lighting : http://www.litraylighting.com/
14. Mindscreen Pvt. Ltd. http://www.mindscreenfilms.com/
15. Peralites http://www.indiabizclub.net/Electrical/PEARLITES.html
16. Sam International http://www.indiamart.com/
17. Shyam Electricals - http://www.shyamelectricals.com/
18. Hpl Electric & Power Pvt.Ltd http://www.hplindia.com

Power Generation

1. Advance Engineering Company - http://www.advanceengineering.com/
2. APGENCO http://www.apgenco.com/
3. Birla Power Solutions Limited http://www.birlapower.com
4. Dyna Hitech Power Systems Ltd http://www.dynahitech.com
5. Essar Group http://www.essar.com/Group/group.asp
6. Essar Power Ltd. http://www.essar.com/
7. Jindal Steel & Power Ltd. http://www.jindalsteelpower.com
8. Kaiga Atomic Power Station http://www.npcil.org/docs/kaigaps.htm
9. Kakrapar Atomic Power Station http://www.npcil.org/docs/kaps.htm
10. Kirloskar Electric Co http://www.kirloskar-electric.com/
11. Lanco Industries http://www.lancogroup.com/groups/kpower/kpower.html
12. Madras Atomic Power Station (MAPS) http://www.npcil.org/
13. Magnum Power Generation Ltd http://www.magnumgrouponline.com/power/
14. Narora Atomic Power Station http://www.npcil.org/docs/naps.htm
15. National Thermal Power Corporation (NTPC) http://www.ntpc.co.in
16. NEPC India Ltd http://www.nepcindia.com
17. PTC India http://www.ptcindia.com
18. Rajasthan Atomic Power Station (RAPS) http://www.npcilraps.com/
19. Rajasthan Renewable Energy Corporation Limited (RRECL) http://www.rrecl.com/
20. Reliance Energy http://www.rel.co.in
21. Tarapur Atomic Power Station http://www.npcil.org/docs/taps.htm
22. Tata Electric Companies http://www.tata.com
23. Tata Power http://www.tatapower.com/
24. Techno Instrument India Pvt.Ltd web site url: http://www.tiiindia.com/
25. Torrent Power web site url: http://www.torrentpower.com/
26. Uttar Pradesh Power Corporation Ltd http://www.uppcl.org/
27. ABB Ltd www.abb.co.in/
28. Adani Power Ltd www.adanipower.com/
29. Aplab Ltd www.aplab.com/
30. BF Utilities Ltd www.bfutilities.com/
31. CESC Ltd. www.cescltd.com/

32. CMI Ltd. www.cmilimited.com.au/
33. DLF Power Limited www.eipowertech.com/dlf_power_limited.htm
34. DPSC Ltd www.dpscl.com/
35. Energy Development Company Ltd www.energy.com.ph/
36. Entegra Ltd www.entegra.co.in/
37. GMR Infrastructure Ltd www.gmrgroup.in/
38. Gujarat Industries Power Company Ltd www.gipcl.com/
39. GVK Power & Infrastructure Ltd www.gvk.com/
40. HBL Power Systems Ltd www.hbl.in/
41. Indowind Energy Ltd www.indowind.com/
42. Indo power projects Ltd www.indopowerprojects.in/
43. Jaiprakash Power Ventures Ltd www.jppowerventures.com/
44. Kalpataru Power Transmission Ltd www.kalpatarupower.com/
45. KSK Energy Ventures Ltd www.ksk.co.in/
46. National Wind & Power Corpn. Ltd www.nationalwind.com/
47. Neyveli Lignite Corpn. Ltd www.nlcindia.com/
48. NHPC Ltd. www.nhpcindia.com/
49. NTPC Limited www.ntpc.co.in/
50. Power Grid Corpn. Of India Ltd www.powergridindia.com/
51. PTC India Ltd www.ptcindia.com/
52. Reliance Power Ltd www.reliancepower.co.in/
53. Savant Infocomm Ltd www.savant-infocomm.com/
54. Sun Source (India) Ltd www.sunsource.in/about_us.htm
55. Suryachakra Power Corpn. Ltd www.suryachakra.in/
56. Suzlon Energy Limited www.suzlon.com/

Electric wires & Cables

1. Aksh Optifibre Limited http://www.akshoptifibre.com/
2. Anant Distributors Private Ltd. http://www.proflexcable.com/
3. Brimson Cables Private Ltd http://www.brimsoncable.com/
4. Capital Cables India Limited - http://www.indiantrade.com/cci/
5. Colt Cables Private Limited http://www.coltcables.com/
6. Cords Cable Industries Ltd http://www.cordscable.com/
7. Delton Cables Limited - http://www.deltoncables.com/
8. Fort Gloster Industries Limited http://www.glostercables.com/
9. Kaydour Cables India http://www.kaydourcables.com
10. KEI Industries Limited http://www.kei-ind.com/
11. Lapp India http://www.lappindia.com/
12. National Cable Industries http://www.nationalcables.com/
13. Navinbhai Cables Private Ltd http://www.ncplindia.com/
14. Neolex Cables http://www.neolexcable.com/
15. North Eastern Cables Private Ltd //www.khetangroup.com/
16. Novoflex Marketing Private Limited. http://www.novoflexgroup.com/
17. Polycab Wires Private Limited http://www.polycab.com/
18. Q-Flex Cables Limited http://www.qflexcable.com/
19. Ravin Cables limited - Primecab brand of cables. http://www.primecab.com/
20. Relemac India http://www.relemacindia.com

21. RollRing Industries - Calicut, Kerala. http://www.rollring.com/
22. Samdaria Electricals http://www.samdariaelectricals.co.in/
23. Satish Enterprises http://www.satishenterprise.com/
24. Shree Nakoda Cables Private Limited. http://www.nakodacables.com/
25. Skytone Electricals (India) http://www.skytonecables.com/
26. Surbhi Cables Industries Private Limited. http://www.indiamart.com/surbhi/
27. Surbhi Telelink Pvt. Ltd http://www.surbhiindia.com/
28. Torrent Cables Ltd http://www.torrentcables.com/
29. Universal Cables http://www.universalcablesltd.com
30. Usha Martin http://www.ushamartin.com
31. Weather Crafts Ltd http://www.weathercraft.com/
32. Finolex Cables Limited http://www.finolex.com

Electrical exporters

1. Arbariya steels http://www.arbariya.com/
2. Bajaj International Pvt. Ltd. http://www.bajajinternational.com/
3. Biax http://www.biaxmetals.com/
4. Brightech Valves and Controls Pvt Ltd http://www.brightechvalves.com
5. Dynamic Scaffolding & Equipment Co http://www.dynamicscaffolding.com/
6. Excel Metal And Engg. Industries http://www.excelmetal.net
7. Impex Trading Company http://www.impextradingco.com
8. Miltop Trading Company http://www.miltop.com/
9. Om(India)Exports http://omindiaexpo.com
10. Oriental Export Corporation http://www.indialinks.com/oriental/
11. Sevana Electrical Group http://www.sevana.com/
12. Veejay Lakshmi Engineering Works Limited http://www.veejaylakshmi.com
13. Vishal Electromag Industries http://www.vishalmotor.com
14. Vaibhav Electricals http://www.vaibhavelectricals.com
15. Industrial Forging Industries http://www.ifi-india.net/
16. Imperial Brass Component http://electronics-electrical.exportersindia.com
17. M/s Horizon Exports http://www.horizonexport.net
18. Golden Crest Marketing Network Pvt. Ltd. http://www.aceenergy.co.in/
19. Shree Krishna Enterprises http://www.shreekrishnaenterprises.co.in/
20. Sahiba International Trading Company http://www.sahibainternational.com
21. Pushpak Metals web site url: http://www.pushpakmetals.com/
22. IEEMA http://www.ieema.org
23. ELSTER METERING (P) LTD http://www.elstermetering.com/
24. Shivam Electronics http://www.shivamelectronics.com
25. SUBRTO http://www.subrtoburnishing.com/
26. Unitek Engineers http://www.unitekengineers.com
27. Euro Technologies http://www.eurotapes.in/

Measurements & Instrumentation

1. Active Control Pvt Ltd http://www.indiamart.com/activecontrols/
2. Autometers Alliance Limited. http://www.autometers.com/
3. EIP Bulk Control Pvt Ltd http://www.eipbulkcontrols.com/
4. IMP Power Limited http://www.imp-power.com/
5. Instruments International http://www.indorecity.com/ii/index.html

6. Kanji Precision Works http://www.kanjimeters.com
7. Mittal Enterprises http://www.indiamart.com/mittalenterprises/
8. Modsonic http://www.modsonic.com/
9. Nippon Instruments http://www.nipponinstruments.com/
10. Poonawala Electro Weigh http://www.peweigh.com
11. Prok Devices http://www.prokdvs.com
12. Shanti Instruments http://www.shanti-instruments.com
13. Texlab Industries http://www.texlabindia.com
14. Vasavi Electronics http://www.vasavi.com
15. VPL Infotech http://vplinf.com

Power Distribution

1. Areva T&D India http://www.areva-td.co.in/
2. BSES Yamuna Power Ltd and BSES Rajdhani Power Ltd. http://www.bsesdelhi.com/
3. Central Power Distribution Company of Andhra Pradesh Limited http://www.apcentralpower.com/
4. CESC Limited http://www.cescltd.com
5. Eastern Power Distribution Company of Andhra Pradesh Limited http://www.apeasternpower.com/
6. Elpro International Limited http://www.elproindia.com/
7. Gujarat Electricity Board http://www.gseb.com
8. Haryana Power Utilities http://www.haryanaelectricity.com/
9. Hubli Electricity Supply Company Limited (HESCOM) http://www.hescom.org/
10. Maharashtra State Electricity Distribution Company Limited http://www.mahadiscom.in
11. Natinal Hydroelectric Power Corporation of India http://www.nhpcindia.com
12. Noida Power Company Ltd http://www.noidapower.com
13. North Delhi Power Limited http://www.ndplonline.com/
14. Power Grid Corporation Of India http://www.powergridindia.com
15. Southern Power Distribution of Andhra Pradesh http://www.apspdcl.in
16. Transmission Corporation of Andhra Pradesh (AP TRANSO) http://www.aptranscorp.com/

Transformers

1. Emco Limited http://www.emcoindia.com
2. Golecha Electro Stampings. http://www.golecha.com/
3. Intaf India http://www.intafindia.com/
4. Kappa Electricals Private Ltd http://www.kappaelectricals.com/
5. Kotsons Transformers http://www.kotsons.com/
6. Mahindra Electrical Works http://www.mewindia.com
7. Marson's Electricals http://www.marsonselectricals.com/
8. P.M. Electronics Limited. http://www.indiamart.com/pme/
9. Prismatic India http://www.wind-it.com/
10. Raksan Transformers Private Ltd http://www.raksantransformers.com/
11. Roland Electronics and devices Private Ltd. http://www.redpl.com/
12. Sai Electricals http://www.saielectricals.com/
13. Tesla Transformers Limited http://www.teslatransformers.com/
14. Transformers and Electricals Kerala Limited. http://www.telk.com/
15. Transformers and Rectifiers (India) Ltd. http://www.jmtril.com
16. T.S. International http://www.transformers-reactors.com

Green Energy Companies in India

1. **Suzlon Energy:** Suzlon is of course the first company that comes to mind. They are one of the leading wind energy companies in India are one of the better known alternative energy companies in India. Here are some details from their website.

Conceived in 1995 with just 20 people, Suzlon is now a leading wind power company with:

- Over 16,000 people in 25 countries
- Operations across the Americas, Asia, Australia and Europe
- Fully integrated supply chain with manufacturing facilities in three continents
- Sophisticated R&D capabilities in Belgium, Denmark, Germany, India and The Netherlands
- Market leader in Asia, Suzlon Market Share (Combined with REpower) rose to 9.8% thereby making Suzlon 3rd * largest wind turbine manufacturing company in the world.

2. **Orient Green Power Limited:** Primarily engaged in the Wind and Biomass energy space. Currently wind constitutes the majority of their energy portfolio, so this is another one of India's wind energy companies. As of March 31, 2010, their total portfolio of operating projects included 193.1 MW of aggregate installed capacity, which comprised 152.6 MW of wind energy projects and 40.5 MW of biomass projects. Their portfolio of committed and development projects included approximately 815.5 MW of prospective capacity, which comprised an estimated 622.0 MW of wind energy projects, 178.5 MW of biomass projects and a 15.0 MW small hydroelectric project

3. **Indowind Energy Limited:** Indowind Energy Limited is also a wind energy company that develops wind farms for sale, manages the wind assets, and generates green power for sale to utilities and corporates. Turnkey implementation of Wind Power Projects, from concept to commissioning. Wind Asset Management Solution for installed assets, including operations, billing, collection of revenue to project customers. Supply of Green Power to Customers. CERs (Carbon Credit) Sales and Trading.

4. **Suryachakra Power Corporation Limited:** SPCL is the flagship company of Suryachakra Group with interests in Power generation – renewable energy (biomass, Solar, hydro, Wind) and Clean Technology / Ultra Super Critical Thermal Power Plants (coal, Gas), Engineering Consultancy and Urban infrastructure development activities. Suryachakra Power Corporation Limited has established 3 wholly owned subsidiaries for setting up of renewable energy (biomass) power projects and also acquired stake in Sri Panchajanya Power Private limited, which was setting up a 10 MW Biomass Power Plant at Hingoli, Maharashtra.

5. **NEPC India:** This is a Public Limited Company promoted by the Khemka Group with the primary objective of promoting wind energy. This successful Group has a multi crore turnover from diversified activities in the field of Power Generation from Wind Energy and manufacture and marketing of Wind Turbine Generator (a renewable energy device).

6. **Azure Power:** Azure Power is the green energy space as it is one of the solar energy companies in India. It is a solar power company, and they are supplying power to 20,000 people in 32 villages in Punjab.

7. **AuroMira Energy:** Auro Mira is also a green technology energy company that is private, and present in the Biomass, Small Hydel and Wind Sectors. It plans to develop over 1000 MW capacity by 2012. AME is presently focusing in Biomass, Small Hydro and Wind Sectors. AME plans to invest $ 900 Million to develop, own and operate over 1000 MW in clean energy in addition to WTG manufacture and to develop over 15000 acres of energy plantation in the next five years. AME intends to foray into other clean energy technologies, solar, bio-diesel etc. in the future.

8. **Husk Power Systems:** This is truly an alternate energy company which owns and operates 35-100 kW "mini power-plants" that use discarded rice husks to deliver electricity to off-grid villages in the Indian "Rice Belt

9. **RRB Energy Limited:** This company is in the field of Wind Power Generation, and is an ISO 9001:2008 and ISO 14001:2004 certified Company. RRBEL is also an Independent Power Producer having established wind farms of aggregate megawatt capacity.

10. **Moser Baer Solar Limited:** This is a subsidiary of Moser Baer that is one of the solar energy companies as well. The Group's photovoltaic manufacturing business was established between 2005 and 2007 with the primary objective of providing reliable solar power as a competitive non-subsidized source of energy.

Internationally renowned MNC's to offer electrical jobs

Cisco, Hewlett Packard, Intel, AMD, IBM, Ford, General Electric, General Motors, Lockheed Martin, Lucent Technologies, Moog, Micron, Motorola, Nokia, Qualcomm, Rockwell, Sun Microsystems, Atto Technology, MTI and Texas Instruments.

Top core companies in India to offer electrical jobs

1. Bharat Sanchar Nigam Limited
2. Tata Consultancy Services
3. Bharti Airtel Limited
4. Wipro Ltd
5. Infosys Technologies Limited
6. Hewlett-Packard India
7. HCL Infosystems Limited
8. Reliance Communications Ltd
9. LG Electronics India Pvt Ltd
10. IBM India Pvt Ltd
11. Videocon Industries Ltd
12. HCL Technologies Limited
13. Satyam Computer Services Ltd
14. Siemens Ltd.
15. Samsung India Electronics Pvt. Ltd.
16. Mahanagar Telephone Nigam Ltd
17. Redington (India) Limited
18. Cognizant Technology Solutions
19. Idea Cellular Ltd
20. Videsh Sanchar Nigam Limited

Exclusive Government jobs for Electrical Engineers

1. ISRO
2. DRDO
3. BEL
4. BHEL
5. GAIL
6. SAIL
7. HAL
8. HPCL
9. NTPC
10. ONGC
11. IOCL
12. RRB
13. ECIL
14. APGENCO
15. APTRANSCO

Ref: http://www.regencyengg.com/eee_job_offer.html

K.L.N. COLLEGE OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Training plan for the Academic Year 2017-2018

Year/TPO/ Department Activity	TPO	DEPARTMENT	STAFF
First Year	Path Transformations, ICE(Initiate Create Expose)	C,C++ Programming (Application Oriented Programming Skill is must) -3Days, BEC Training, Tell About Yourself TCS Campus Commune Registration(Test Portal) Smart India Hackathalon Code Vita, Enginx Awareness on GATE,TANCET, GMAT, IES, IAS, BOAT, TOEFL, NTPC, ISRO Attitude- Behavior-Dress coding-Personality-Hairstyle-Certificates Filing Awareness on Profile of the Core and IT Companies Direct Placement through Company Webportal Awareness on Bond Rules Real Time Projects	R.Divya M.S.C.Sujitha Mr. S. Rajalingam
Second Year	Level-I: Aptitude Training/ Verbal Reasoning/Quantitative Aptitude	LABVIEW,Core1,Core2, C,C++ Programming(Application Oriented Programming Skill is must), MOCK Awareness, MOCK GD, Tell About Yourself, Core Training-Data Pattern-Syllabus available-EDC,LIC,DLC TCS Campus Commune Registration(Test Portal) Project Contest Smart India Hackathalon Code Vita, Enginx CCNA Certification Awareness on GATE,TANCET, GMAT, IES, IAS, BOAT, TOEFL, NTPC, ISRO Attitude- Behavior-Dress coding-Personality-Hairstyle-Certificates Filing Direct Placement through Company Webportal Awareness on Bond Rules Real Time Projects	M.JeyaMurugan S.Manoharan Dr. M. Mahalakshmi Mr. S. Rajalingam
Third Year	Level-II: Aptitude Training/ Verbal Reasoning/Quantitative	JAVA Programming (10 Days-Even Semester) C,C++ Programming (Application Oriented Programming Skill is must)	Dr. S. Venkatesan, Dr. K. Gnanambal, Dr. S. M. Kannan,

	Aptitude AMCAT Specific Training(Aptitude, Core, Language-Syllabus available), AMCAT Exam(4 Hrs Exam-2 times) Resume Preparation Email writing NIIT Aptitude Exam TCS Webinar	Texas Instruments (5 Days-Odd Semester)[Java Certification must for ZOHO, MindTree, IVTL, Salary: 6.5 Lakhs] MOCK Awareness, MOCK GD, Tell About Yourself Training-Data Pattern- Syllabus available-EDC,LIC,DLC TCS Campus Commune Registration(Test Portal) Project Contest Smart India Hackathalon Code Vita, Enginx CCNA Certification Awareness on GATE,TANCET, GMAT, IES, IAS, BOAT, TOEFL, NTPC, ISRO Attitude- Behavior-Dress coding-Personality-Hairstyle-Certificates Filing Direct Placement through Company Webportal Awareness on Bond Rules Real Time Projects	Mr. A. Marimuthu, M. Ganeshkumari,
Final Year	Level-III: Aptitude Training/ Verbal Reasoning/Quantitative Aptitude Company Specific Training Programme AMCAT Exam(4 Hrs Exam-2 times) Resume Preparation, Email writing MOCK Group Discussion, MOCK Interview Awareness Programme for Higher Education-Abroad TCS Webinar	IoT Techniques, C,C++ Programming(Application Oriented Programming Skill is must) MOCK GD Training-Data Pattern- Syllabus available-EDC,LIC,DLC,VLSI,MPMC,ES,DSP Jasmin InfoTech- C, C++,MPMC,DSP-Application Oriented CADENCE – CT(Salary: 8 Lakhs) TESSOLVE- EDC, LIC, DLC (Semiconductor Based) LABVIEW- CLAD Certification TCS Campus Commune Registration(Test Portal) Project Contest Smart India Hackathalon Code Vita, Enginx CCNA Certification, Oracle Certification Awareness on GATE,TANCET, GMAT, IES, IAS, BOAT, TOEFL, NTPC, ISRO Attitude-Behavior-Dress coding-Personality-Hairstyle-Certificates Filing Direct Placement through Company Webportal, Awareness on Bond Rules Real Time Projects	Dr. A.S.S. Murugan M. Jegadeesan R. Jeyarohini A. Manoj N.Vimal Radha Vignesh

www.guvi.com - **Real Time problem and Programming Skill**

ANNA UNIVERSITY

CENTRE FOR UNIVERSITY INDUSTRY COLLABORATION (CUIC)

A READY RECKONER FOR ENHANCING PLACEMENT ACTIVITIES

Dr. T .Thyagarajan, Director- CUIC

ROLES AND RESPONSIBILITIES OF PLACEMENT REPRESENTATIVES

- Collect list of HR contact details through your friends/ relatives/ Newspaper/ Faculty members/ Seniors /Alumni
- Pass on the HR Contact details to Placement Officer for sending official invitations
- Ensure Placement Officer contact details in all the Department Brochures, to have single point contact
- Keep the hard and soft copies of Curriculum and Syllabus
- Keep the contact details (Email, Landline No. & Mobile No.) of all your classmates
- Keepthecompletedetailsabouteachstudent(SSLC,HSC,SemesterwiseGPA,CGPA,DOB, Community, History & Current Arrears)
- Keep the contact details of other Placement Representatives
- Generate comprehensive Question Bank (Both Technical and Non-Technical)
- CollectAptitudeQuestions/GDTopics/InterviewQuestionstocreateQuestionBank
- Give training to the needy students
- Avoid spreading Rumors / False / Assumed information (This will lead to blacklisting)
- Avoid accepting false information / Track records from students (This will lead to rejection of offer)
- Avoid arguing with company HRs about previous year's branch preferences

TIPS TO FACE INTERVIEWS

- Maintain Professional Ethics and Moral Standards
- Read Frequently Asked Questions by interviewers and prepare the answers and practice them
- Prepare a Comprehensive Resume
- Practice with Mock Aptitude Test / Mock GD / Mock Interview etc.,
- Prepare well in fundamental & core subjects of respective branches
- Update database after declaration of revaluation / Arrear result
- View the placement Notice Board regularly
- As for as possible change of contact details should be avoided
- Visitthecompany'swebsitebeforeattendingthePrePlacementTalk(PPT)togetclearidea
- Avoid Wearing Jeans / T-shirts/ Cheppal / Half sleeves
- Be punctual for PPT as well as for Test /Interview
- Avoid standing outside or near the PPT hall
- Occupy first benches also, during the PPT
- Maintain Gender separation during the PPT
- Maintain discipline during PPT
- Avoid coming late to the PPT/test/interview
- Ask only relevant / valid questions during the PPT
- Carry Pen, Pencil, Eraser, Passport Size Photograph etc., for the test

- Avoid contacting the HR directly. It should be through CUIC only.
- Carry Resume / Copy of Mark Sheets / Community / Co-curricular / Extra-curricular Certificate etc for the interview
- Bring OBC Certificate for PSU interview
- Bring doctor certificate for differently abled physique
- Informatthebeginningitselfaboutcolourblindness,hearingdisordertoavoiddisqualificationatthe end.
- Attend the interview with clean dress (tucked-in) and neatly shaved to maintain dignity and decorum
- Wishtheinterviewerwhileenteringtheroom.Thanktheinterviewerbeforeleavingtheroom
- During the interview, relax and avoid showing your nervousness obvious
- Speak loudly, clearly; sit up straight; try to look at the interviewer's eyes when you speak to him/her
- Be honest in your approach
- Keep your answers brief and to the point.
- Do not give 'YES' or 'NO' replies.
- Don't discuss your personal difficulties
- Show your enthusiasm and willingness
- Exhibit your skills and abilities.
- AvoidpassingbadcommentsRemarksabouttheCollege/University/Staffduringtheinterview
- Prepare in advance, the questions you want to ask about the job and company
- Be available till the announcement of results
- Maintain silence during announcements of results
- Do not exhibit bad mannerism during the placement activity

FREQUENTLY ASKED QUESTIONS (FAQ)

- Tell me about yourself
- What are your long range goals, ambitions, future plans?
- What do you want to be doing 5 or 10 years from now?
- How do you feel that you can contribute to this job?
- What are your hobbies?
- What are your strengths? Your weaknesses?
- What are your big accomplishments?
- What are your special abilities?
- Why you think that you are suitable for this kind of job?
- What is your career goal?
- What do you know about our company?
- Why are you applying for a job with us?
- What salary do you expect?
- Do you have any plans to go back to school?
- What kind of job profile you enjoy the most, the least and why?
- I have interviewed others for this job, why should I give you the job?
- Would you be willing to take an aptitude test?
- Can you tell me any thing about yourself that you think I might want to know?
- What is the lowest salary you would accept?
- Can you handle criticism? How do you deal with it?
- Do you have any questions?

H.R.EXPECTATIONS

- Sincerity and honesty in the answers
- Attentiveness in listening to the questions
- Body language: gesture, posture, eye contact and confidence level
- Stress handling capability

- Positive approach in answering the questions
- Exhibition of skills, accomplishments and talents
- Enthusiasm and motivation level
- Command over communication skills
- Willingness and positive approach
- Exhibition of talents and accomplishments

POINTS DECIDED BY THE ORGANISATION

- Interview time and venue
- Decision on allowing identical branches
- Execution of Bond
- Change in eligibility criteria
- Place of work
- Percentage cut-off/ history of arrears / standing arrears
- Postponement of dates/cancellation
- The number of recruits, on-board date

USEFUL WEBSITES FOR APTITUDE, GD, TECHNICAL & HR INTERVIEW

http://www.indiabix.com
http://www.fresher world.com
http://www.placementpapers.net
http://www.allinterview.com
http://www.geekinterview.com
http://www.careersvalley.com
http://www.sampleplacementpapers.com
http://www.chetanasinterview.com
http://www.ittestpapers.com
http://www.indianfresher.com
http://www.freeplacementpapers.com
http://www.educationindiaworld.com
http://www.jobsnresults.com
http://www.psychometric-success.com
http://testfunda.com
http:/www.test4free.com
http://www.placementexpress.com

TECHNICAL
http://www. mechanicalengineeringblog.com
http://www.indiabix.com

USEFUL WEBSITES FOR ENGLISH COMMUNICATION

http://www.nonstopenglish.com
http://www.talkenglish.com
http://www.freeenglishnow.com
http://www.ego4u.com
http://www.focusenglish.com
http://www.bbc.co.uk/worldservice/learningenglish
http:/www.englishclub.com
http://www.easyenglish.com

http://learnenglish.britishcouncil.org
englishbee.net
http://www.english4today.com/free_content.cfm
http://www.english-the-international-language.com
http://www.teachingengtish.org.uk
http://esl.about.com
http://www.learnenglish.de
http://www.busuu.com
http://free-esl.com

'FACTS' TO PERFORM WELL IN THE PLACEMENTS

F - Clear the subjects in **F**irst attempt

- Learn **F**oreign Language (German, Japanese, French, Chinese)

A - Have right **A**ttitude

C - Have good **C**ommunication Skills

Maintain a **C**GPA above 7.5

T - **T**hink Positive

Develop creative **T**hinking

S - Be **S**agacious. Express your wisdom and Exhibit your Talents

K.L.N. College of Engineering.

How to prepare for Anna University Examinations.

Don't study just for passing the tests/exams. Ensure that you understood the concepts and you can explain/ demonstrate/justify/analyze/ answer/ argue/ design /implement/draw/develop any mathematical model, based on what you have learnt. If you are confident enough, you can successfully solve any question papers/technical interviews/competitive examinations at any time without fear/confusion/ delay. Remember that, you will be working in an environment, after graduation, where all the process/operation of machineries/equipment's are based on the basic scientific and engineering concepts what you have studied from first year to final year of your Engineering programme, where you are the only person to solve any problems aroused. You can't get away/escape from these. Hence, it is a lifelong learning, a wonderful experience.

Syllabus, books (at least 2-one Text books as prescribed in the syllabus, -one local author book) previous year question papers(atleast10), class notes, are your God/religion/food/ destiny/light. Ensure that you have studied all the contents of the syllabus, prepared correct answers for all questions in the AU question paper. Remember that ignoring any one word in the syllabus means you are losing 5 to 10 marks in each unit in the AU exams. Similarly, ignoring any one questions in the previous year question paper means you are losing 10 marks in each unit of AU exams. Don't expect that your Professor would cover 100% of the syllabus. Even if he/she has covered 100% of the syllabus don't think that he/she has covered 100% of each line in the syllabus. It is your responsibility to prepare 10% in excess of each lines in each units of the syllabus in addition to the contents taught by your Professors. This is possible by referring the books and the questions asked in the competitive exam books like GATE/TANCET/IES.

Plan your studies –right from the second week of the commencement of the classes till the semester examination is over. In a year, you will be attending the college only for 200 days(including theory/practical exams-8hours /day). You have 165 days (24 hours /day) away from the college. Prepare a time table from Monday-Friday. Take a rest on Saturday and Sunday. Allocate 3-4 hours in the evening for study.1-2 hours for completing assignments/observation/record note work. Remaining 2-3 hours for studying subjects A,B.(Mon),C,D(Tue)E,F(Wed), A,B(Thu),C,D(Fri),E,F(Sat or Sun).Each day, in addition to studying subjects for the current syllabus, you should refer competitive exam books (GATE/TANCET/IES/ Objective type questions –technical) corresponding to the current syllabus. This parallel preparation will ensure that you have prepared for state level and National level examinations there by you will be meeting the expectations of the Engineering Educational Objectives. Your preparation for AU examination should be vigorous (minimum), 15 days from the commencement of the exam and it should be maximum 2 days before the exam. You need to allocate for 8 hours per day during minimum days (early morning-6AM-10AM with a break for an hour, 10AM-12 Noon-sleep/rest,12 noon-2PM-study,2PM-5PM-sleep/rest,6PM-10PM –study). Repetition/memorizing is required to retain certain contents to improve confidence on the subject. During rest time you can have group discussion with your friends or you can teach slow learners, thereby you will gain more knowledge and also help others.

Presentation – AU Exam-General complaints by students that the valuation is not fair or poor valuation. Remarks of examiners that there is nothing in the answer paper. Parents may say that either "college is not good" or "it is a fate". Public may say "poor quality" and the experts may comment that "only 20% are employable". These statements will go on for centuries. Many students believes that they have written

right answers mostly (but many of them actually wrong) and few examiners assumed certain answers by students are wrong (but many of them are actually correct). It is 70% true that students are not presenting the answers well and it is 30% true that the valuation is not fair. But it is 95% true that the deserved students are getting expected results in most of the papers. This is because of good presentation. Good presentation involves many factors such as legible writing, good handwriting. answering correctly (100% correct),all answers with mathematical modeling/pictorial representation/drawing/layout/sketches with different colors, writing 7 pages for 16 mark questions with valid points and sketches, 4 pages for 8 marks with valid points and sketches/drawings/equations, characterizes,. Such students will solve problems correctly without any overwriting/ strikeouts. Simply, they do not cheat. These are the in-born qualities or developed over the years due to good habits, friendship, good character, obedience, hard work, well brought up by parents and blessing by God. Everyone can become like them if their attitude is good. Fear of God is the beginning of Wisdom. The examiners will know about your quality, just by referring the way you have answered Part-A- questions. A well prepared student would get a maximum of 18 out of 20. This impresses the examiner so that they will award a maximum of 14-16 for each part-B-question. Most of the students would answer wrongly in the Part-A-questions. This is due to their poor preparation during Class tests/internal tests, frequently taking leave, lot of diversion, skipping the classes for attending Co-Curricular/ /extra-curricular activities etc inside or outside the college.. Attending the classes is more important than attending college. Students are expected to attend 98%classes to maintain the continuity of the subjects learnt. One-day absence means it will take a week to study on his/her own. If he/she fails to study on his/her own to review the classes not attended means a loss of 10 marks in the exams.

Know well about Why one should apply for revaluation without /with Photocopy, schedule and fees to be paid. Sometimes a well-deserved students get low CGPA than he/she expected or even may fail. This may be due to error in valuation/data entry. Hence such students should not hesitate to apply for revaluation with/without photocopy. The parents should also be informed, all about these unfortunates (the misunderstanding between parents /sons/daughter/faculty may lead to unnecessary things). 90% of those deserved students who applied for revaluation with photo copy benefitted after revaluation. Ignorance/communication failure of these formalities, by deserved students, may damage their life. Some students failed in revaluation secured “O”grade in the REVIEW, shows some hope in the examination system and the better prospect of the students.

Need to maintain high CGPA in every semester. This is possible only when one gets “S” grade in all practical’s (from first to eighth semester).Those who are regular in attending the lab classes, submitting the observation and record note in time, disciplined behavior with staff and students in the class room/laboratory/campus etc. will impress the faculty in-charge of practical’s, so that he/she will help such students during regular lab classes. This will improve the students to do the lab experiments with confidence and fetch them to get more marks. This will reflect in internal assessment marks also. Classification of degree- First class with distinction- More than 8.5 CGPA (passed all subjects in first attempt), First class- More than 6.5 CGPA at the end of eighth semester, less than this would be second class.