

## Academic Course Description

BHARATH University  
 Faculty of Engineering and Technology  
 Department of Mechanical Engineering

**UNIT – I D.C. AND A.C CIRCUITS 6**

Ohm’s law – Kirchoff’s Laws, V – I Relationship of Resistor (R) Inductor (L) and capacitor (C). Series parallel combination of R, L & C – Current and voltage source transformation – mesh current & node voltage method –superposition theorem – Thevenin’s and Norton’s Theorem - Problems.

**UNIT – II ELECTRICAL MACHINES 6**

Construction, principle of operation, Basic Equations and applications - D.C.Generators and D.C.Motors. -Single phase Induction Motor - Single Phase Transformer.

**UNIT – III BASIC MEASUREMENT SYSTEMS 6**

Introduction to Measurement Systems, Construction and Operating principles of PMMC, Moving Iron, Dynamometer Wattmeter, power measurement by three-watt meter and two watt method – and Energy meter.

Name of the instructor	Class handling	Office location	Office phone	Email (domain:@bharathuniv.ac.in)	Consultation
<b>UNIT IV – SEMICONDUCTOR DEVICES <span style="float: right;">6</span></b>					
Ms. JEMIMA DANIEL	All First Year Students	FIRST YEAR MAIN BULIDING		daniel.jemima@yahoo.co.in	9.00-9.50 AM
Mrs. SUMITHRA	All First Year Students	FIRST YEAR MAIN BULIDING		sumithraks@gmail.com	12.45-1.15 PM
<b>UNIT V – DIGITAL ELECTRONICS <span style="float: right;">6</span></b>					

Number system – Logic Gates – Boolean Algebra – De-Morgan’s Theorem – Half Adder & FullAdder – Flip Flops.

**Total No. of Periods: 30**

**TEXT BOOKS:**

1. N.Mittle “Basic Electrical Engineering”. Tata McGraw Hill Edition, New Delhi, 1990.
2. A.K. Sawhney, ‘A Course in Electrical & Electronic Measurements & Instrumentation’, Dhanpat Rai and Co, 2004.
3. Jacob Millman and Christos C-Halkias, “Electronic Devices and Circuits”, Tata McGraw Hill

**REFERENCE BOOKS:**

1. Edminister J.A. “Theory and problems of Electric Circuits” Schaum’s Outline Series. McGraw Hill Book Company, 2nd Edition, 1983.
2. Hyatt W.H and Kemmerly J.E. “Engineering Circuit Analysis”, McGraw Hill Internatinal Editions, 1993.
3. D. P. Kothari and I. J. Nagrath “Electric machines” Tata McGraw-Hill Education, 2004
4. Millman and Halkias, “Integrated Electronics”, Tata McGraw Hill Edition, 2004.

Computer usage: Nil

**Professional component**

General	-	100%
Basic Sciences	-	0%
Engineering Sciences & Technical Arts	-	0%
Professional Course	-	0%

**Broad area :** Telephone etiquettes | Transformation of sentences | Presentation skills | Writing reports

**Test Schedule**

S. No.	Test	Tentative Date	Portions	Duration
1	Cycle Test-1	August 1 <sup>st</sup> week	Session 1 to 14	2 Periods
2	Cycle Test-2	September 2 <sup>nd</sup> week	Session 15 to 28	2 Periods
3	Model Test	October 1 <sup>st</sup> week	Session 1 to 45	3 Hrs
5	University Examination	TBA	All sessions / Units	3 Hrs.

**Mapping of Instructional Objectives**

To develop speaking skills and understanding of the language. It will help the students to communicate with the strangers and introduce themselves. This course emphasizes:	Correlates to program outcome		
	H	M	L
1. To develop an understanding of the oral skills.	b,c,d,j	a,f,k	e,g
2. To develop the ability to discussion in a group confidently.	b,c,f	a,d,g,h	j
3. To be able to write essays efficiently .	a,d,e	b,g	j,k
4. Introduce students to telephone etiquettes.	a,d,e	b,g,h,k	f,j
5. To be able to use the grammatical rules in the language correctly.	e	a,b,c,d,g	j,k

H: high correlation, M: medium correlation, L: low correlation

**Draft Lecture Schedule**

Session	Topics	Is it grammar-related exercise? (Yes/No)	Text / Chapter
<b>UNIT I</b>			
1.	Parts of Speech	Yes	[T1]
2.	Active and passive voice	Yes	
3.	Subject-verb agreement	Yes	
4.	Writing about school life, hobbies, family and friends	No	
5.	Word formation with prefixes and suffixes	Yes	
6.	Tenses	Yes	
7.	Summarizing and note making	No	
<b>UNIT II</b>			
8.	Cause and effect relations	Yes	[T1]
9.	Punctuations	Yes	
10.	Differences between verbal and non-verbal communication	No	
11.	e-mail communication and its etiquettes	No	
12.	Homophones	Yes	
13.	Interpreting graphic representation - flow chart and bar chart	No	
<b>UNIT III</b>			
14.	Degrees of comparison	Yes	[T1]
15.	Wh- questions	Yes	
16.	S.I. units	No	
17.	Lab reports - Physics and Chemistry	No	
18.	Workshop Report	No	
19.	Survey report for introducing new product in the market	No	
<b>UNIT IV</b>			
20.	Writing project proposals	No	[T1]
21.	Presentation skills	No	
22.	If conditionals	Yes	
23.	Writing a review, Preparing minutes of the meeting	No	
24.	Agenda, Official circulars	No	
<b>UNIT V</b>			
25.	Accident reports	No	[T1]
26.	Hints development	No	
27.	Imperatives	Yes	
28.	Marking the stress	Yes	
29.	Connectives	Yes	
30.	Prepositional relatives	No	

## Teaching Strategies

The teaching in this course aims at establishing a good fundamental understanding of the language:

- Formal face-to-face conversations
- Tutorials, which allow for exercises in transforming sentences and frame sentences
- Lectures and seminar presentations, which provide the student with practical demonstration.
- Small exercise solving tasks, to enable the students to assess their understanding of the concepts.

<b>Evaluation Strategies</b>	
Cycle Test – I	5%
Cycle Test – II	5%
Model Test	10%
Seminar/Assignment/Online Test/Quiz	5%
Attendance	5%
Final Exam	70%

**Prepared by:** Ms. Jemima Daniel, Assistant professor , Department of English

*BEN101-TECHNICAL ENGLISH I*

## Addendum

### **ABET Outcomes expected of graduates of B.Tech / MECH / program by the time that they graduate:**

- a) The ability to apply knowledge of mathematics, science, and engineering fundamentals.
- b) The ability to identify, formulate and solve engineering problems.
- c) The ability to design a system, component, or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- d) The ability to design and conduct experiments, as well as to analyze and interpret data
- e) The ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- f) The ability to apply reasoning informed by the knowledge of contemporary issues.
- g) The ability to broaden the education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
- h) The ability to understand professional and ethical responsibility and apply them in engineering practices.
- i) The ability to function on multidisciplinary teams.
- j) The ability to communicate effectively with the engineering community and with society at large.
- k) The ability in understanding of the engineering and management principles and apply them in project and finance management as a leader and a member in a team.
- l) The ability to recognize the need for, and an ability to engage in life-long learning.

## **Program Educational Objectives**

### **PEO1: PREPARATION:**

Mechanical Engineering graduates are enthusiastic to provide strong foundation in mathematical, scientific and engineering fundamentals necessary to analyze, formulate and solve engineering problems in the field of Mechanical Engineering.

### **PEO2: CORE COMPETENCE:**

Mechanical Engineering graduates have competence to enhance the skills and experience in defining problems in the field of Mechanical Engineering and Technology design and implement, analyzing the experimental evaluations, and finally making appropriate decisions.

### **PEO3: PROFESSIONALISM:**

Mechanical Engineering graduates made competence to enhance their skills and embrace new thrust areas through self-directed professional development and post-graduate training or education.

### **PEO4: PROFICIENCY:**

Mechanical Engineering graduates became skilled to afford training for developing soft skills such as proficiency in many languages, technical communication, verbal, logical, analytical, comprehension, team building, inter personal relationship, group discussion and leadership skill to become a better professional.

### **PEO5: ETHICS:**

Mechanical Engineering graduates are morally merged to apply the ethical and social aspects of modern Engineering and Technology innovations to the design, development, and usage of new products, machines, gadgets, devices, etc.

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*BEN101-TECHNICAL ENGLISH I*

Course Teacher	Signature
Ms. JEMIMA DANIEL	
Mrs. SUMITHRA	

**Course Coordinator**  
Dr. Manimozhi

**HOD/MECH**