



Alva's Institute of Engineering & Technology

Shobhavana Campus, Mijar, Moodbidri, D.K - 574225

Phone: 08258-262725, Fax: 08258-262726

## VISION AND MISSION OF INSTITUTE

### VISION STATEMENT

"Transformative education by pursuing excellence in Engineering and Management through enhancing skills to meet the evolving needs of the community"

### MISSION STATEMENT

- To bestow quality technical education to imbibe knowledge, creativity and ethos to students community.
- To inculcate the best engineering practices through transformative education.
- To develop a knowledgeable individual for a dynamic industrial scenario
- To inculcate research, entrepreneurial skills and human values in order to cater the needs of the society.

  
Dr. Peter Fernandes  
PRINCIPAL

Alva's Institute of Engg. & Technology,  
Mijar, MOODBIDRI - 574 225, D.K.



**ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

**Shobhavana Campus, Mijar, Moodbidri, D.K – 574225**

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## **Department of Engineering Physics**

### **Vision**

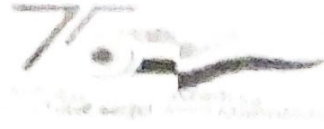
“Excel in imparting knowledge in physics and propel scientific research to technological horizon”

### **Mission**

- To educate students in fundamentals of Physics in Engineering curriculum
- To conduct research in frontier science.
- To ensure technological research to meet the needs of the nation.



N. O. D  
Dept. Of Physics  
Alva's Institute of Engg. & Technology  
Mijar, MOODBIDRI - 574 225



# ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

ವಿಶ್ವವಿದ್ಯಾಲಯ ಸಂಖ್ಯೆ ೧೯೯೪-೧೯೯೫ ರಲ್ಲಿ ಸ್ಥಾಪಿತವಾದ ವಿಶ್ವವಿದ್ಯಾಲಯ

## VISVESVARAYA TECHNOLOGICAL UNIVERSITY

State University of Government of Karnataka Established as per the VTU Act, 1994 "JnanaSangama" Belagavi-590018, Karnataka, India

Prof. B. E. Rangaswamy, Ph.D  
REGISTRAR

Phone: (0831) 2498100

Fax: (0831) 2405467

REF: VTU/BGM/GC/2023/ 712

DATE: 9 MAY 2023

### Revised-NOTIFICATION

**Subject:** Tentative Academic Calendar of II Semester B.E./B.Tech., B.Arch and B.Plan and IV semester B.E./B.Tech., programs of University regarding...

**Reference:** Hon'ble Vice-Chancellor's approval dated: 09.05.2023

The computer-Aided Engineering Drawing (BCEDK103) examinations of II semester B.E./B.Tech., programs are scheduled between 15.05.2023 to 24.05.2023. A revised Academic Calendar (Tentative) of II Semester B.E./B.Tech., B.Arch and B.Plan and IV semester B.E./B.Tech., programs of the University for the academic year 2022-23 are hereby notified as mentioned below;

(Tentative) Academic Calendar for semesters of II semester B.E./B.Tech/B.Arch./B.Plan and IV semester B.E./B.Tech., Programs for AY 2022-23 (May 2023)			
	II Semester B.E./B.Tech. (2022 scheme)	II Semester B.Arch, B.Plan (2021 scheme)	IV Semester B.E./ B.Tech (2021 scheme)
Commencement of the semester	25.05.2023	17.05.2023	17.05.2023
Internship #	-----	-----	17.05.2023 To 03.06.2023
Commencement of the Classes	25.05.2023	17.05.2023	05.06.2023
Last Working day of the Semester	09.09.2023	31.08.2023	16.09.2023
Practical Examination/Viva Examination	11.09.2023 To 20.09.2023	01.09.2023 To 08.09.2023	19.09.2023 To 30.09.2023
Theory Examinations	21.09.2023 To 21.10.2023	11.09.2023 To 27.09.2023	03.10.2023 To 20.10.2023
Commencement of next Semester	25.10.2023	09.10.2023	25.10.2023

# for lateral entry students and regular students who have failed or remained absent for Internship-I. Also for students who have taken readmissions to 2021 scheme at 3<sup>rd</sup> and 4<sup>th</sup> semester level from 2018 scheme.





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(A Unit of Alva's Education Foundation)

Shobhavana Campus, Mijar-574225, Moodbidri, D.K

Phone: 08258-262725, Fax: 08258-262726

Affiliated to VTU Belagavi and Approved by AICTE, New Delhi, Recognized by Govt. of Karnataka

(Accredited by NAAC with A+ Grade)

## VISION

"Transformative education by pursuing excellence in Engineering and Management through enhancing skills to meet the evolving needs of the community"

## MISSION

- To bestow quality technical education to imbibe knowledge, creativity and ethos to students community.
- To inculcate the best engineering practices through transformative education.
- To develop a knowledgeable individual for a dynamic industrial scenario.
- To inculcate research, entrepreneurial skills and human values in order to cater the needs of the society.

Week	Month	Days							Activities
		Mon	Tue	Wed	Thu	Fri	Sat	Sun	
1	FEB	13	14	15	16	17	18	19	13 : Commencement of VIII Semester
2		20	21	22	23	24	25	26	
3		27	28						
4	MAR			1	2	3	4	5	20 : Commencement of VI Semester 22 <sup>nd</sup> : Chandramana Ugadi 27 - 31 : Technical Talk/Club and Social Activity 30 - 31 : 1 <sup>st</sup> IA for VIII Semester
5		6	7	8	9	10	11	12	
6		13	14	15	16	17	18	19	
7		20	21	22	23	24	25	26	
8		27	28	29	30	31			
9	APR						1	2	3 : Mahaveera Jayanthi      7: Good Friday 14: Dr B.R. Ambedkar Jayanti      22: Khutha-e-Ramzan 20-21 - Student Mentoring 26 : College Level Project Exhibition 27-28 : 2 <sup>nd</sup> IA for VIII Semester 24- 29 Technical Talk/Club / Social Activity
10			4	5	6		8	9	
11		10	11	12	13		15	16	
12		17	18	19	20	21	22	23	
13		24	25	26	27	28	29	30	
14	MAY		2	3	4	5	6	7	1 : Labor day      6 : Sports Day 8-9 : 3 <sup>rd</sup> IA for VIII Semester 13 : Last Working Day of VIII Semester 17 : Commencement of IV Semester 20 : Traditional Day.      22 : College Day Celebration 25 : Commencement of II Semester 26 : Farewell Function to Final Years 22-23 : Student Mentoring    25 - 27 : 1 <sup>st</sup> IA for VI Semester 29-31 : Technical Talk/Club / Social Activity
15		8	9	10	11	12	13	14	
16		15	16	17	18	19	20	21	
17		22	23	24	25	26	27	28	
18		29	30	31					
19	JUN				1	2	3	4	16 To 19 : 2 <sup>nd</sup> IA for VI Semester 26-27 : Student Mentoring 20 - 24 : Technical Talk/Club / Social Activity 28 , 30 & 1 <sup>st</sup> July : 1 <sup>st</sup> IA for IV Semester 30/Jun to 4/July : 1 <sup>st</sup> IA for II Semester 29- Bakrid
20		5	6	7	8	9	10	11	
21		12	13	14	15	16	17	18	
22		19	20	21	22	23	24	25	
23		26	27	28	29	30			
24	JULY						1	2	1-4 : 1 <sup>st</sup> IA for II Semester 5 - 7 : 3 <sup>rd</sup> IA for VI Semester 10 : Last Working Day of VI Semester 17 - 22 : Technical Talk/Club / Social Activity 24-25 : Student Mentoring 29 : Last Day of Moharram
25		3	4	5	6	7	8	9	
26		10	11	12	13	14	15	16	
27		17	18	19	20	21	22	23	
28		24	25	26	27	28	29	30	
29		31							
30	AUG		1	2	3	4	5	6	4 To 8 : 2 <sup>nd</sup> IA for II Semester 4 To 7 : 2 <sup>nd</sup> IA for IV Semester 15 : Independence Day 24-25 : Student Mentoring 28- 31 : Technical Talk/Club / Social Activity
31		7	8	9	10	11	12	13	
32		14	15	16	17	18	19	20	
33		21	22	23	24	25	26	27	
34		28	29	30	31				
35	SEP					1	2	3	1 To 5 : 3 <sup>rd</sup> IA for II Semester 8 To 11 : 3 <sup>rd</sup> IA for IV Semester 9 : Last Working Day of II Semester 16 : Last Working Day of IV Semester
36		4	5	6	7	8	9	10	
37		11	12	13	15	16	17	18	

Course Title:	<b>Applied Physics for EEE Stream</b>		
Course Code:	<b>22PHYE12/22</b>	CIE Marks	50
Course Type (Theory/Practical/Integrated )	Integrated	SEE Marks	50
		Total Marks	100
Teaching Hours/Week (L:T:P: S)	2:2:2:0	Exam Hours	03
Total Hours of Pedagogy	40 hours+10-12 Lab Slots	Credits	04
<b>Course objectives</b> <ul style="list-style-type: none"> <li>To study the principles of quantum mechanics</li> <li>To understand the properties of dielectrics and superconductors</li> <li>To study the essentials of photonics for engineering applications.</li> <li>To understand fundamentals of vector calculus and EM waves.</li> <li>To study the knowledge about semiconductors and devices.</li> </ul>			
<b>Teaching-Learning Process</b> These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes and make Teaching –Learning more effective <ol style="list-style-type: none"> <li>1. Flipped Class</li> <li>2. Chalk and Talk</li> <li>3. Blended Mode of Learning</li> <li>4. Simulations, Interactive Simulations and Animations</li> <li>5. NPTEL and Other Videos for theory topics</li> <li>6. Smart Class Room</li> <li>7. Lab Experiment Videos</li> </ol>			
<b>Module-1 (08 Hours)</b>			
<b>Quantum Mechanics:</b> de Broglie Hypothesis and Matter Waves, de Broglie wavelength and derivation of expression by analogy, Phase Velocity and Group Velocity, Heisenberg's Uncertainty Principle and its application (Non existence of electron inside the nucleus-Non Relativistic), Principle of Complementarity, Wave Function, Time independent Schrödinger wave equation, Physical Significance of a wave function and Born Interpretation, Expectation value, Eigen functions and Eigen Values, Particle inside one dimensional infinite potential well, Waveforms and Probabilities. Numerical Problems  <b>Pre-requisite: Wave–Particle dualism</b> <b>Self-learning: de Broglie Hypothesis</b>			
<b>Module-2 (08 hours)</b>			
<b>Electrical Properties of Solids:</b> <b>Conductors:</b> Quantum Free Electron Theory of Metals: Assumptions, Fermi-energy, Fermi factor, Variation of Fermi Factor with Temperature and Energy, Mention of expression for electrical conductivity. <b>Dielectric Properties:</b> Polar and non-polar dielectrics, Electrical Polarization Mechanisms, internal fields in solids, Clausius-Mossotti equation (Derivation), Solid, Liquid and Gaseous dielectrics. Application of dielectrics in transformers, Capacitors, Electrical Insulation. Numerical Problems. <b>Superconductivity:</b> Introduction to Superconductors, Temperature dependence of resistivity, Meissner Effect, Critical Field, Temperature dependence of Critical field, Types of Super Conductors, BCS theory (Qualitative), High Temperature superconductivity, SQUID, MAGLEV, Numerical problems.  <b>Pre-requisites: Classical Free Electron Theory</b> <b>Self-learning: Dielectrics Basics</b>			
<b>Module-3 ( 08 hours)</b>			
<b>Lasers and Optical Fibers:</b> <b>Lasers:</b> Characteristics of LASER, Interaction of radiation with matter, Expression for Energy Density and its significance. Requisites of a Laser System. Conditions for Laser action. Principle, Construction and Working of Carbon Dioxide Laser. Application of Lasers in Defense (Laser range finder) and Laser Printing. Numerical			



<b>Problems</b>  <b>Optical Fibers:</b> Total Internal Reflection, Propagation mechanism, Angle of Acceptance, Numerical Aperture, Fractional Index Change, Modes of Propagation, Number of Modes and V Number, Types of Optical Fibers. Attenuation and Mention of Expression for Attenuation coefficient, Attenuation Spectrum of an Optical Fiber with Optical Windows. Discussion of Block Diagram of Point to Point Communication, Intensity based Fiber Optic Displacement Sensor, Merits and Demerits, Numerical problems.  <b>Pre-requisite: Properties of light</b> <b>Self-learning: Total Internal Reflection</b>	
<b>Module-4 (08 hours)</b>	
<b>Maxwell's Equations and EM waves:</b> <b>Maxwell's Equations:</b> Fundamentals of Vector Calculus. Divergence and Curl of Electric field and Magnetic field (static), Gauss' divergence theorem and Stoke's theorem. Description of laws of Electrostatics, Magnetism, Faraday's laws of EMI, Current Density, Equation of Continuity, Displacement Current (with derivation), Maxwell's equations in vacuum, Numerical Problems <b>EM Waves:</b> The wave equation in differential form in free space (Derivation of the equation using Maxwell's equations), Plane Electromagnetic Waves in vacuum, their transverse nature.  <b>Pre-requisite: Electricity &amp; Magnetism</b> <b>Self-learning: Fundamentals of vector calculus.</b>	
<b>Module-5 (08 hours)</b>	
<b>Semiconductors and Devices:</b> Fermi level in Intrinsic & Extrinsic Semiconductor, Expression for concentration of electrons in conduction band & holes concentration in valance band (only mention the expression), Relation between Fermi energy & Energy gap in intrinsic semiconductors(derivation), Law of mass action, Electrical conductivity of a semiconductor (derivation), Hall effect, Expression for Hall coefficient (derivation) and its application. Photo-diode and Power responsivity, Construction and working of Semiconducting Laser, Four probe method to determine resistivity, Phototransistor, Numerical problems.  <b>Pre-requisite: Basics of Semiconductors</b> <b>Self-learning: Fermi level in Intrinsic &amp; Extrinsic Semiconductor</b>	
<b>Course outcome (Course Skill Set)</b> At the end of the course the student will be able to:	
CO1	<b>Describe</b> the fundamental principles of the Quantum Mechanics and the essentials of Photonics.
CO2	<b>Elucidate</b> the concepts of conductors, dielectrics and superconductivity
CO3	<b>Discuss</b> the fundamentals of vector calculus and their applications in Maxwell's Equations and EM Waves.
CO4	<b>Summarize</b> the properties of semiconductors and the working principles of semiconductor devices.
CO5	<b>Practice</b> working in groups to conduct experiments in physics and <b>Perform</b> precise and honest measurements.
<b>Assessment Details (both CIE and SEE)</b> The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50). The minimum passing mark for the SEE is 35% of the maximum marks (18 marks out of 50). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 35% (18 Marks out of 50) in the semester-end examination(SEE), and a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.	
<b>Continuous Internal Evaluation(CIE):</b> The CIE marks for the theory component of the IC shall be <b>30 marks</b> and for the laboratory component <b>20 Marks</b> .	
<b>CIE for the theory component of the IC</b>	
<ul style="list-style-type: none"> <li>Three Tests each of 20 Marks; after the completion of the syllabus of 35-40%, 65-70%, and 90-100% respectively.</li> <li>Two Assignments/two quizzes/ seminars/one field survey and report presentation/one-course project totalling 20 marks.</li> </ul>	

Total Marks scored (test + assignments) out of 80 shall be scaled down to **30 marks**

### **CIE for the practical component of the IC**

- On completion of every experiment/program in the laboratory, the students shall be evaluated and marks shall be awarded on the same day. The **15 marks** are for conducting the experiment and preparation of the laboratory record, the other **05 marks shall be for the test** conducted at the end of the semester.
- The CIE marks awarded in the case of the Practical component shall be based on the continuous evaluation of the laboratory report. Each experiment report can be evaluated for 10 marks. Marks of all experiments' write-ups are added and scaled down to 15 marks.
- The laboratory test (**duration 03 hours**) at the end of the 15<sup>th</sup> week of the semester /after completion of all the experiments (whichever is early) shall be conducted for 50 marks and scaled down to **05 marks**.

Scaled-down marks of write-up evaluations and tests added will be CIE marks for the laboratory component of IC/IPCC for **20 marks**.

- The minimum marks to be secured in CIE to appear for SEE shall be 12 (40% of maximum marks) in the theory component and 08 (40% of maximum marks) in the practical component. The laboratory component of the IC/IPCC shall be for CIE only. However, in SEE, the questions from the laboratory component shall be included. The maximum of 05 questions is to be set from the practical component of IC/IPCC, the total marks of all questions should not be more than 25 marks.

The theory component of the IC shall be for both CIE and SEE.

### **Semester End Examination(SEE):**

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (**duration 03 hours**)

- The question paper shall be set for 100 marks. The medium of the question paper shall be English/Kannada. The duration of SEE is 03 hours.
- The question paper will have 10 questions. Two questions per module. Each question is set for 20 marks. The students have to answer 5 full questions, selecting one full question from each module. The student has to answer for 100 marks and **marks scored out of 100 shall be proportionally reduced to 50 marks**.

There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

### **Suggested Learning Resources:**

#### **Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)**

1. A Textbook of Engineering Physics- M.N. Avadhanulu and P.G. Kshirsagar, 10th revised Ed, S. Chand. & Company Ltd, New Delhi.
2. An Introduction to Lasers theory and applications by M.N. Avadhanulu and P.S. Hemne revised Edition 2012. S. Chand and Company Ltd -New Delhi.
3. Engineering Physics-Gaur and Gupta-Dhanpat Rai Publications-2017.
4. Concepts of Modern Physics-Arthur Beiser: 6th Ed; Tata McGraw Hill Edu Pvt Ltd- New Delhi 2006.
5. Fundamentals of Fibre Optics in Telecommunication & Sensor Systems, B.P. Pal, New Age International Publishers.
6. Introduction to Electrodynamics, David Griffith, 4<sup>th</sup> Edition, Cambridge University Press 2017.
7. Lasers and Non Linear Optics – B.B. Laud, 3rd Ed, New Age International Publishers 2011.
8. LASERS Principles, Types and Applications by K.R. Nambiar-New Age International Publishers.
9. Solid State Physics-S O Pillai, 8th Ed- New Age International Publishers-2018.

### **Web links and Video Lectures (e-Resources):**

**Laser:**<https://www.britannica.com/technology/laser.k>

**Laser:**<https://nptel.ac.in/courses/115/102/115102124/>

**Quantum mechanics:**<https://nptel.ac.in/courses/115/104/115104096/>

**Physics:**<http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html>

**Numerical Aperture of fiber:**<https://bop-iitk.vlabs.ac.in/exp/numerical-aperture-measurement>

**Activity Based Learning (Suggested Activities in Class)/ Practical Based learning**

<http://nptel.ac.in>

<https://swayam.gov.in>

<https://www.vlab.co.in/participating-institute-amrita-vishwa-vidyapeetham>

<https://vlab.amrita.edu/index.php?sub=1&brch=189&sim=343&cnt=1>

[https://virtuallabs.merlot.org/vl\\_physics.html](https://virtuallabs.merlot.org/vl_physics.html)

<https://phet.colorado.edu>

<https://www.myphysicslab.com>

**Laboratory Component:**

Any Ten Experiments have to be completed from the list of experiments

Note: The experiments have to be classified into

- a) Exercise
- b) Demonstration
- c) Structured Inquiry
- d) Open Ended

Based on the convenience classify the following experiments into above categories selecting at least three experiments for each type. Select at least one simulation/spreadsheets activity.

**List of Experiments**

1. Determination of wavelength of LASER using Diffraction Grating.
2. Determination of acceptance angle and numerical aperture of the given Optical Fiber.
3. Determination of Magnetic Flux Density at any point along the axis of a circular coil.
4. Determination of resistivity of a semiconductor by Four Probe Method
5. Study the I-V Characteristics of the Given Bipolar Junction Transistor.
6. Determination of dielectric constant of the material of capacitor by Charging and Discharging method.
7. Study the Characteristics of a Photo-Diode and to determine the power responsivity / Verification of Inverse Square Law of Intensity of Light.
8. Study the frequency response of Series & Parallel LCR circuits.
9. Determination of Planck's Constant using LEDs.
10. Determination of Fermi Energy of Copper.
11. Identification of circuit elements in a Black Box and determination of values of the components.
12. Determination of Energy gap of the given Semiconductor.
13. Step Interactive Physical Simulations.
14. Study of motion using spread Sheets
15. Study of Application of Statistics using spread sheets
16. PHET Interactive

Simulations(<https://phet.colorado.edu/en/simulations/filter?subjects=physics&type=html,prototype>)

**COs and POs Mapping (Individual teacher has to fill up)**

COs	POs											
	1	2	3	4	5	6	7	8	9	10	11	12
CO1	3	2	-	-	-	-	-	-	-	-	-	2
CO2	3	2	-	-	-	-	-	-	-	-	-	2
CO3	3	2	-	-	-	-	-	-	-	-	-	2
CO4	3	2	-	-	1	-	-	-	-	-	-	2
CO5	3	2	1	-	2	-	-	3	3	-	-	2

**Level 3- Highly Mapped, Level 2-Moderately Mapped, Level 1-Low Mapped**

**Note :** The CO-PO mapping values are indicative. The course coordinator can alter the mapping using **Competency and Performance Indicators** mentioned in the **AICTE Exam reforms**.



**ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY**

Shobhavana campus, Mijar-574225

Education Foundation®

Group	Physics	CLASS TIME TABLE					Semester	Second		
Section	E(EC1)						Academic Year	2022-2023		
Class Coordinator		Mrs. Kavitha, Dept. of Mathematics					Room No.	411		
Day/ Period	9.00 to 9.50	9.50 to 10.40	10.40 to 11.00	11.00 to 11.50	11.50 to 12.40	12.40 to 1.40	1.40 to 2.30	2.30 to 3.20	3.30 to 5.00	
Monday	BPHYE202 (JA)	BESCK204D (PKC)	TEA	BBEE203 (VP)	BETCK205 (TR)	LUNCH	BPHYE202 (E1 Batch Lab) (JA+RP) /E2 Batch: LIBRARY			
Tuesday	BMATE201 (KB)	BPHYE202 (E2 Batch Lab) (JA+SKK) /E1 Batch: LIBRARY					BICOK207 (AK)	BETCK205 (TR)	BBEE203 (VP)	
Wednesday	BMATE201 LAB (KB)		TEA	BPHYE202 (JA)	BESCK204D (PKC)		LIBRARY			
Thursday	BBEE203 (VP)	BMATE201 (KB)		BIDTK258 (VS)	BPHYE202 (JA)		BESCK204D (PKC)	BETCK205 (TR)	Mini Project	
Friday	BETCK205 (TR)	BBEE203 (VP)		BESCK204D (PKC)	BPWSK206 (AP )			BMATE201 (KB)	BPHYE202 (JA)	MMM
Saturday	BMATE201 (KB)	BPHYE202 (JA)		BESCK204D (PKC)	BBEE203 (VP)					

**ALLOCATION OF THEORY SUBJECTS**

COURSE	COURSE CODE	COURSE TITLE	FACULTY NAME	FACULTY CODE
ASC(IC)	BMATE201	Mathematics for EEE stream II	Mrs. Kavitha B	KB
ASC(IC)	BPHYE202	Applied Physics for EEE stream	Dr. Jayarama A Dr. Ramaprasad A T Dr. Shashi Kumar K	JA RP SKK
ESC	BBEE203	Basic Electronics	Dr. Veera Pratap	VP
ESCII	BESCK204D	Introduction to Mechanical Engineering	Mr. Praveen K C	PKC
ETCII	BETCK205B	Green Buildings	Ms. Tanvi Rai	TR
AEC	BPWSK206	Professional Writing Skills in English	Mr. Ajith Peter	AP
HSMC	BICOK207	Indian Constitution	Mr. Ajith Kumar	AK
AEC/SDC	BIDTK258	Innovation and Design Thinking	Mr. Vishal	VS
MMM	Mentor Mentee Meeting			

**ASC(IC):**Applied Science Course, **ESC:** Engineering Science Course, **ETCII:**Emerging Technology Course-II, **AEC:** Ability Enhancement Course, **HSMC:** Humanity & Social Science and Management Course, **SDC:** Skill Development Course

**E1 Batch: 1-32 & E2 Batch: 33-62**

**H.O.D**

Dept. Of Physics

Alva's Institute of Engg. & Technology  
Mijar, MOODBIDRI - 574 225

**HOD****PRINCIPAL**

Alva's Institute of Engg. & Technology  
Mijar, MOODBIDRI - 574 225, D.K

**PRINCIPAL**

## STUDENT LIST

### E SECTION (EVEN SEMESTER)

Sl.No.	BRANCH	NAME
1	4AL22EC001	ADITYA VERMA
2	4AL22EC003	AKASH H M
3	4AL22EC004	AMRUTHA R
4	4AL22EC005	ANKITH I N
5	4AL22EC006	ANNAPOORNA A C
6	4AL22EC008	ANVIT UTTAM NAIK
7	4AL22EC009	AQUIL SHAH
8	4AL22EC010	ARAVIND D R
9	4AL22EC012	ASHWITH R
10	4AL22EC013	BASAVANNA
11	4AL22EC014	Bhagyashri R H
12	4AL22EC018	BINDU A
13	4AL22EC019	CHAITRA BASAVARAJ GANDAROTTI
14	4AL22EC021	CHANDAN N R
15	4AL22EC023	GAUTAM RAJU CHAVAN
16	4AL22EC024	DEEPAK Y M
17	4AL22EC025	DERICK ROBINSON KOTIAN
18	4AL22EC026	GAGAN RAJ
19	4AL22EC027	H G GAHANA JAIN
20	4AL22EC031	KARTHIK
21	4AL22EC032	KARTHIK S KASHYAP
22	4AL22EC033	KARTHIK S GUGADADDI
23	4AL22EC034	KEESHALYA N S
24	4AL22EC035	KIRAN M S
25	4AL22EC036	KOMAL DUNDAPPA KARASIDDAGOL
26	4AL22EC040	MADHUSUDHAN K
27	4AL22EC042	Mallikarjun Gouda
28	4AL22EC043	MANAN N G
29	4AL22EC047	MANOJ JAGALI
30	4AL22EC048	MEGHA KULKARNI
31	4AL22EC050	NAKSHA B ALVEKAR
32	4AL22EC051	NANDISHAGOUDA DODDALINGANAGOUDAR
33	4AL22EC052	Naveen S S
34	4AL22EC054	NIREEKSHA G M
35	4AL22EC055	NISARGA
36	4AL22EC056	NITHESHA
37	4AL22EC058	OMKAR N PATTAR
38	4AL22EC060	POOJA SULLAD
39	4AL22EC061	PRADEEP M C
40	4AL22EC064	PRAJWAL N MANEGAR
41	4AL22EC065	PRANAVA UDUPA E P



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42	4AL22EC069	PREETAM SANJAY PATIL
43	4AL22EC070	PRITHVIRAJ S SHIRAGANNAVAR
44	4AL22EC073	RAGHAVENDRA M O
45	4AL22EC074	RAHUL U
46	4AL22EC075	RAKSHA G
47	4AL22EC077	RAMU SHIVAPPA HIRUR
48	4AL22EC079	ROHAN A NAIK
49	4AL22EC080	ROSHINI M V
50	4AL22EC081	S CHIRANJEEVI
51	4AL22EC083	SAGAR N K
52	4AL22EC085	SAHANA N JYOYHI
53	4AL22EC087	SANJUSHREE T
54	4AL22EC088	Savitha C B
55	4AL22EC089	SAYUJ P NAIR
56	4AL22EC090	SHAILESH
57	4AL22EC097	SHWETA VEERANAGOUDRA
58	4AL22EC111	Sunil Itagi
59	4AL22EC120	VEDANTH M H
60	4AL22EC121	VEERESH
61	4AL22EC124	VINAY S K
62	4AL22EC125	VINAYAK BALAPPA PATTAR

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## LESSON PLAN

### E SECTION (EVEN SEMESTER)

### ENGINEERING PHYSICS EEE STREAM

<b>AIET</b>	<b>Lesson Plan &amp; Execution</b>			<b>Format No.</b>	<b>ACD 08</b>	
				<b>Issue No.</b>	<b>01 00</b>	
				<b>Rev. No.</b>		
Name of the faculty				DR. JAYARAMA A		
Semester and Section				SECOND, E SECTION		
Date of Commencement				29-05-2022		
Last Working Day of the Semester				09-09-2023		
Source Materials List						
1. A Textbook of Engineering Physics-M.N. Avadhanulu and P.G. Kshirsagar, 10th revised Ed, S. Chand. & Company Ltd, New Delhi.				6. Introduction to Electrodynamics, David Griffith, 4th Edition, Cambridge University Press 2017.		
2. An Introduction to Lasers theory and applications by M.N.Avadhanulu and P.S.Hemne revised Edition 2012. S.Chand and Company Ltd -New Delhi.				7. Lasers and Non-Linear Optics – B.B. Laud, 3rd Ed, New Age International Publishers 2011.		
3. Engineering Physics-Gaur and Gupta-Dhanpat Rai Publications-2017.				8. LASERS Principles, Types and Applications by K.R. Nambiar-New Age International Publishers.		
4. Concepts of Modern Physics-Arthur Beiser: 6th Ed;Tata McGraw Hill Edu Pvt Ltd- New Delhi 2006.				9. Solid State Physics-S O Pillai, 8th Ed- New Age International Publishers-2018.		
5. Fundamentals of Fibre Optics in Telecommunication & Sensor Systems, B.P. Pal, New Age International Publishers.						
Subject Name : <b>Physics for Electrical &amp; Electronics Engineering Stream</b>						
Period	Plan			Execution		
	Date	Topics to be covered	Source Material needed	Topics Covered	Date	Source Material Referred
1	29-05-	de Broglie Hypothesis	1	de Broglie Hypothesis	29-05-	1

	2023	and Matter Waves, de Broglie wavelength and derivation of expression by analogy,		and Matter Waves, de Broglie wavelength and derivation of expression by analogy,	2023	
3	31-05-2023	Phase Velocity and Group Velocity,	1	Phase Velocity and Group Velocity,	31-05-2023	1
4	01-06-2023	Heisenberg's Uncertainty Principle and its application (Non-existence of electron inside the nucleus-Non Relativistic)	1	Heisenberg's Uncertainty Principle and its application (Non-existence of electron inside the nucleus-Non Relativistic)	01-06-2023	1
4	01-06-2023	Principle of Complementarity, Wave Function,	1	Principle of Complementarity, Wave Function,	01-06-2023	1
6	02-06-2023	Time independent Schrodinger wave equation,	1	Time independent Schrodinger wave equation,	02-06-2023	1
2	03-06-2023	Physical Significance of a wave function and Born Interpretation, Expectation value,	1	Physical Significance of a wave function and Born Interpretation, Expectation value,	03-06-2023	1
1	05-06-2023	Eigen functions and Eigen Values, Particle inside one-dimensional infinite potential well,	1	Eigen functions and Eigen Values, Particle inside one-dimensional infinite potential well,	05-06-2023	1
3	07-06-2023	Waveforms and Probabilities.	1	Waveforms and Probabilities.	07-06-2023	1
4	08-06-2023	Numerical Problems	1	Numerical Problems	08-06-2023	1
6	09-06-2023	Numerical Problems	4	Numerical Problems	09-06-2023	4
2	10-06-2023	<b>Dielectric Properties:</b> Polar and non-polar dielectrics, Types of Polarization, internal fields in solid,	3	<b>Dielectric Properties:</b> Polar and non-polar dielectrics, Types of Polarization, internal fields in solid,	10-06-2023	3
2	10-06-2023	Clausius-Mossottiequation(Derivation), solid, liquid and gaseous dielectrics.	3	Clausius-Mossottiequation(Derivation), solid, liquid and gaseous dielectrics.	10-06-2023	3
1	12-06-2023	Application of dielectrics in transformers, Capacitors, and	3	Application of dielectrics in transformers, Capacitors, and	12-06-2023	3

		Electrical Insulation.		Electrical Insulation.		
3	14-06-2023	Numerical problems.	1	Numerical problems.	14-06-2023	1
4	15-06-2023	<b>Superconductivity:</b> Introduction to Superconductors, Temperature dependence of resistivity, Meissner's Effect,	3	<b>Superconductivity:</b> Introduction to Superconductors, Temperature dependence of resistivity, Meissner's Effect,	15-06-2023	3
6	16-06-2023	Silsbee Effect, Types of Super Conductors,	3	Silsbee Effect, Types of Super Conductors,	16-06-2023	3
2	17-06-2023	Temperature dependence of Critical field, BCS theory (Qualitative),	3	Temperature dependence of Critical field, BCS theory (Qualitative),	17-06-2023	3
1	19-06-2023	High-Temperature superconductivity, SQUID, MAGLEV,	3	High-Temperature superconductivity, SQUID, MAGLEV,	19-06-2023	3
3	21-06-2023	Numerical problems.	1	Numerical problems.	21-06-2023	1
6	23-06-2023	Numerical problems.	3	Numerical problems.	23-06-2023	3
2	24-06-2023	<b>Lasers:</b> Characteristics of LASER, Interaction of radiation with matter,	2	<b>Lasers:</b> Characteristics of LASER, Interaction of radiation with matter,	24-06-2023	2
1	26-06-2023	Expression for energy density equation and its significance. Requisites of a Laser system. Conditions for Laser action. Principle,	2	Expression for energy density equation and its significance. Requisites of a Laser system. Conditions for Laser action. Principle,	26-06-2023	2
6	30-06-2023	Construction and working of carbon dioxide laser. Application of Lasers in Defence (Laser range finder) and Laser Printing.	2	Construction and working of carbon dioxide laser. Application of Lasers in Defence (Laser range finder) and Laser Printing.	30-06-2023	2
2	01-07-2023	Numerical problems.	2	Numerical problems.	01-07-2023	2
1	03-07-2023	<b>Optical Fibers:</b> Propagation mechanism, TIR, angle of acceptance, Numerical aperture, fractional index change,	5	<b>Optical Fibers:</b> Propagation mechanism, TIR, angle of acceptance, Numerical aperture, fractional index change,	03-07-2023	5
3	05-07-	Modes of propagation,	5	Modes of	05-07-	5



	2023	Number of modes and V parameter, Types of optical fibers.		propagation, Number of modes and V parameter, Types of optical fibers.	2023	
4	06-07-2023	Attenuation and Mention of expression for attenuation coefficient, Attenuation spectrum of an optical fiber with optical windows.	5	Attenuation and Mention of expression for attenuation coefficient, Attenuation spectrum of an optical fiber with optical windows.	06-07-2023	5
6	07-07-2023	Discussion of the block diagram of point-to-point communication,	5	Discussion of the block diagram of point-to-point communication,	07-07-2023	5
2	08-07-2023	Intensity-based fiber optic displacement sensor, Merits and demerits.	5	Intensity-based fiber optic displacement sensor, Merits and demerits.	08-07-2023	5
1	10-07-2023	Numerical problems.	5	Numerical problems.	10-07-2023	5
3	12-07-2023	<b>Maxwell's Equations:</b> Fundamentals of vector calculus. Divergence and curl of electric field and magnetic field (static),	6	<b>Maxwell's Equations:</b> Fundamentals of vector calculus. Divergence and curl of electric field and magnetic field (static),	12-07-2023	6
4	13-07-2023	Gauss' divergence theorem and Stokes' theorem.	6	Gauss' divergence theorem and Stokes' theorem.	13-07-2023	6
6	14-07-2023	Description of laws of electrostatics, magnetism and Faraday's laws of EMI.	6	Description of laws of electrostatics, magnetism and Faraday's laws of EMI.	14-07-2023	6
6	14-07-2023	Current density & equation of Continuity;	6	Current density & equation of Continuity;	14-07-2023	6
1	17-07-2023	displacement current (with derivation)	6	displacement current (with derivation)	17-07-2023	6
1	17-07-2023	Maxwell's equations in vacuum.	6	Maxwell's equations in vacuum.	17-07-2023	6
4	18-07-2023	<b>EM Waves:</b> The wave equation in differential form in free space (Derivation of the equation using Maxwell's equations),	6	<b>EM Waves:</b> The wave equation in differential form in free space (Derivation of the equation using Maxwell's equations),	18-07-2023	6
2	22-07-2023	Plane electromagnetic waves in vacuum, and	6	Plane electromagnetic waves in vacuum, and	22-07-2023	6

		their transverse nature.		and their transverse nature.		
1	24-07-2023	Numerical problems.	1	Numerical problems.	24-07-2023	1
3	26-07-2023	Numerical problems.	6	Numerical problems.	26-07-2023	6
4	27-07-2023	Fermi energy and Fermi level, Fermi level in intrinsic semiconductors,	9	Fermi energy and Fermi level, Fermi level in intrinsic semiconductors,	27-07-2023	9
6	28-07-2023	Expression for concentration of electrons in conduction band & holes concentration in valance band (only mention the expression),	9	Expression for concentration of electrons in conduction band & holes concentration in valance band (only mention the expression),	28-07-2023	9
1	31-07-2023	Law of mass action, Electrical conductivity of a semiconductor (derivation),	9	Law of mass action, Electrical conductivity of a semiconductor (derivation),	31-07-2023	9
3	02-08-2023	Hall effect, Expression for Hall coefficient (derivation) and its application.	9	Hall effect, Expression for Hall coefficient (derivation) and its application.	02-08-2023	9
4	03-08-2023	Photodiode and Power responsivity,	9	Photodiode and Power responsivity,	03-08-2023	9
6	04-08-2023	Construction and working of Semiconducting Laser,	9	Construction and working of Semiconducting Laser,	04-08-2023	9
2	05-08-2023	Four probe method to determine resistivity,	9	Four probe method to determine resistivity,	05-08-2023	9
4	10-08-2023	Phototransistor.	9	Phototransistor.	10-08-2023	9
6	11-08-2023	Numerical problems.	3	Numerical problems.	11-08-2023	3
6	11-08-2023	Numerical problems.	9	Numerical problems.	11-08-2023	9



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## ACADEMIC RESULT

### E SECTION (EVEN SEMESTER)

### ENGINEERING PHYSICS EEE STREAM

SN	USN	NAME	I IA	II IA	Average	Assigment (10)	Theory (25)	Laboratory (25)	Grand Total (50)
1	4AL22EC001	Aditya Verma	11	10	7	10	17	18	35
2	4AL22EC003	Akash H M	15	23	12	9	21	23	44
3	4AL22EC004	Amrutha R	21	19	13	10	23	24	47
4	4AL22EC005	Ankith I N	21	15	11	10	21	23	44
5	4AL22EC006	Annapoorna A C	14	12	8	10	18	22	40
6	4AL22EC008	Anvit Uttam Naik	25	23	15	10	25	22	47
7	4AL22EC009	Aquil Shah	18	21	12	10	22	22	44
8	4AL22EC010	Aravind D R	22	25	15	10	25	19	44
9	4AL22EC012	Ashwith R	19	22	13	10	23	25	48
10	4AL22EC013	Basavanna	9	13	7	10	17	24	41
11	4AL22EC014	Bhagyashri R H	18	14	10	10	20	24	44
12	4AL22EC018	Bindu A	14	16	10	10	20	23	43
13	4AL22EC019	Chaitra Basavaraj Gandarotti	24	19	14	10	24	24	48
14	4AL22EC021	Chandan N R	11	10	7	10	17	23	40
15	4AL22EC023	Gautam Raju Chavan	0	14	5	10	15	23	38
16	4AL22EC024	Deepak Y M	13	11	8	10	18	13	31
17	4AL22EC025	Derick Robinson Kotian	25	23	15	10	25	24	49
18	4AL22EC026	Gagan Raj	25	25	15	10	25	25	50
19	4AL22EC027	H G Gahana Jain	16	13	9	10	19	23	42
20	4AL22EC031	Karthik	14	17	10	10	20	25	45
21	4AL22EC032	Karthik S Kashyap	16	18	11	10	21	23	44
22	4AL22EC033	Karthik S Gugadaddi	14	14	9	10	19	21	40
23	4AL22EC034	Keeshalya N S	16	17	10	10	20	23	43
24	4AL22EC035	Kiran M S	16	1	6	10	16	14	30
25	4AL22EC036	Komal Dundappa Karasiddagol	19	22	13	10	23	22	45
26	4AL22EC040	Madhusudhan K	24	19	14	10	24	25	49
27	4AL22EC042	Mallikarjun Gouda	24	16	12	10	22	23	45
28	4AL22EC043	Manan N G	22	21	13	10	23	23	46
29	4AL22EC047	Manoj Jagali	11	16	9	10	19	23	42
30	4AL22EC048	Megha Kulkarni	8	17	8	10	18	21	39
31	4AL22EC050	Naksha B Alvekar	23	18	13	10	23	24	47
32	4AL22EC051	Nandishagouda Doddalinganagoudar	12	19	10	9	19	14	33
33	4AL22EC052	Naveen S S	25	25	15	10	25	23	48
34	4AL22EC054	Nireeksha G M	16	19	11	10	21	23	44
35	4AL22EC055	Nisarga	18	20	12	10	22	25	47
36	4AL22EC056	Nithesha	19	20	12	10	22	23	45
37	4AL22EC058	Omkar N Pattar	21	20	13	10	23	24	47
38	4AL22EC060	Pooja Sullad	25	19	14	10	24	24	48
39	4AL22EC061	Pradeep M C	24	20	14	10	24	24	48
40	4AL22EC064	Prajwal N Manegar	12	15	9	10	19	22	41





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41	4AL22EC065	Pranava Udupa E P	24	14	12	10	22	24	46
42	4AL22EC069	Preetam Sanjay Patil	20	14	11	10	21	23	44
43	4AL22EC070	Prithviraj S Shiragannavar	20	20	12	10	22	23	45
44	4AL22EC073	Raghavendra M O	23	17	12		12	25	37
45	4AL22EC074	Rahul U	19	15	11	10	21	23	44
46	4AL22EC075	Raksha G	19	13	10	10	20	21	41
47	4AL22EC077	Ramu Shivappa Hirur	19	15	11	10	21	23	44
48	4AL22EC079	Rohan A Naik	25	21	14	10	24	24	48
49	4AL22EC080	Roshini M V	19	21	13	10	23	24	47
50	4AL22EC081	S Chiranjeevi	16	13	9	10	19	22	41
51	4AL22EC083	Sagar N K	25	22	14	10	24	25	49
52	4AL22EC085	Sahana N Jyoyhi	19	18	12	10	22	25	47
53	4AL22EC087	Sanjushree T	19	20	12	10	22	23	45
54	4AL22EC088	Savitha C B	23	24	15	10	25	24	49
55	4AL22EC089	Sayuj P Nair	11	10	7	10	17	22	39
56	4AL22EC090	Shailesh	25	16	13	10	23	24	47
57	4AL22EC097	Shweta Veeranagoudra	24	19	14	10	24	24	48
58	4AL22EC111	Sunil Itagi	25	19	14	10	24	23	47
59	4AL22EC120	Vedanth M H	22	14	11	10	21	24	45
60	4AL22EC121	Veeresh	20	20	12	10	22	24	46
61	4AL22EC124	Vinay S K	19	16	11	10	21	21	42
62	4AL22EC125	Vinayak Balappa Pattar	22	20	13	10	23	25	48

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