Sri Indu Institute of Engineering and Technology (Autonomous)

(Formerly RVR Institute of Engineering & Technology)

An Autonomous Institution Under UGC

NAAC Accredited. Recognized Under 2(f) of UGC Act 1956

ESTD : 2007

EAMCET CODE: INDI   Approved by AICTE, New Delhi, & Affiliated to JNTUH, Hyderabad.   JNTUH CODE: X3

COURSE FILE

ON

APPLIED PHYSICS

Course Code – AP102BS

I B. Tech Semester-I
A.Y. 2022-23

Prepared by

Mr. P. Srinivasa Chary
Asst. Professor

Head of the Department
Department of H&S
SRI INDU INSTITUTE OF ENGG & TECH
Sheriguda(V) Ibrahimpatnam (M) R.R. Dist-501 510

PRINCIPAL
Sri Indu Institute of Engineering & Tech.
Sheriguda(Vill), Ibrahimpatnam
R.R. Dist. Telangana-501 510.
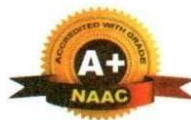
Index of Course File

COURSE FILE INDEX	
S.No	Course/Subject Name
1	Institute Vision & Mission
2	POs /PSOs
3	Course Structure
4	Course syllabus
5	Course Outcomes (CO)
6	Mapping CO with PO/PSO; course with PO/PSO
7	Academic Calendar
8	Time table - highlighting your course periods including tutorial
9	Lesson plan with number of hours/periods, TA/TM, Text/Reference book
10	Gap within the syllabus - mapping to CO, PO/PSO
11	Gaps beyond the syllabus - Mapping to PO/PSO
12	Web references
13	Lecture notes
14	List of Power point presentations / Videos
15	University Question papers
16	Internal Question papers, Key with CO and BTL
17	Assignment Question papers mapped with CO and BTL
18	Scheme of evaluation with CO and BTL mapping
19	Tutorial topics with evidence
20	Result Analysis to identify weak and advanced learners
21	Result Analysis at the end of the course
22	Remedial class schedule and evidences
23	CO, PO/PSO attainment
24	Attendance register
25	Course file (Digital form)

Main Road, Sheriguda, Ibrahimpatnam, R.R. Dist. 501 510, Telangana.
Campus Ph: 9640590999, 9347187999.

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INSTITUTE VISION & MISSION

Vision:

To become a premier institute of academic excellence by providing the world class education that transforms individuals into high intellectuals, by evolving them as empathetic and responsible citizens through continuous improvement.

Mission:

- ➢ **IM1:** To offer outcome-based education and enhancement of technical and practical skills.
- ➢ **IM2:** To Continuous assess of teaching-learning process through institute-industry collaboration.
- ➢ **IM3:** To be a centre of excellence for innovative and emerging fields in technology development with state-of-art facilities to faculty and students' fraternity.
- ➢ **IM4:** To Create an enterprising environment to ensure culture, ethics and social responsibility among the stakeholders.

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(Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderaba
Khalsa Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist., Telangana – 501510
Website: https://siiet.ac.in/

PROGRAM OUTCOMES

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, 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 modelling to complex engineering activities with an understanding of the limitations.

PO6: THE ENGINEER AND SOCIETY: Apply reasoning informed by the contextual knowledge to assesssocietal, 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, 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

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SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

B. Tech. in COMPUTER SCIENCE AND ENGINEERING (IOT)

COURSE STRUCTURE, I YEAR SYLLABUS (BR22 Regulations)

Applicable from Academic Year: 2022-23 Batch

I Year I Semester

S. No.	Course Code	Course Title	L	T	P	Credits
1.	MA101BS	Matrices and Calculus	3	1	0	4
2.	AP102BS	Applied Physics	3	1	0	4
3.	CS103ES	Programming for Problem Solving	3	0	0	3
4.	ME102ES	Engineering Workshop	0	1	3	2.5
5.	EN104HS	English for Skill Enhancement	2	0	0	2
6.	CS106ES	Elements of Computer Science & Engineering	0	0	2	1
7.	AP105BS	Applied Physics Laboratory	0	0	3	1.5
8.	CS107ES	Programming for Problem Solving Laboratory	0	0	2	1
9.	EN107HS	English Language and Communication Skills Laboratory	0	0	2	1
10.	*MC101ES	Environmental Science	3	0	0	0
11.		Induction Programme				
		Total	**14**	**3**	**12**	**20**

I Year II Semester

S. No.	Course Code	Course Title	L	T	P	Credits
1.	MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2.	CH203BS	Engineering Chemistry	3	1	0	4
3.	ME201ES	Computer Aided Engineering Graphics	1	0	4	3
4.	EE201ES	Basic Electrical Engineering	2	0	0	2
5.	EC201ES	Electronic Devices and Circuits	2	0	0	2
6.	CH206BS	Engineering Chemistry Laboratory	0	0	2	1
7.	EE202ES	Basic Electrical Engineering Laboratory	0	0	2	1
8.	CS201ES	Python Programming Laboratory	0	1	2	2
9.	CS203ES	IT Workshop	0	0	2	1
		Total	**11**	**3**	**12**	**20**

APPLIED PHYSICS
(Course Code: AP102BS)

B. Tech. I Year I Sem.   **L   T   P   C**
                                                                                          3   1   0   4

Pre-requisites: 10 + 2 Physics

Course Objectives: The objectives of this course for the student are to:

1.   Understand the basic principles of quantum physics and band theory of solids.
2.   Understand the underlying mechanism involved in construction and working
      principles of various semiconductor devices.
3.   Study the fundamental concepts related to the dielectric, magnetic and energy materials.
4.   Identify the importance of nanoscale, quantum confinement and various fabrications techniques.
5.   Study the characteristics of lasers and optical fibres.

Course Outcomes: At the end of the course the student will be able to:

1.   Understand physical world from fundamental point of view by the concepts of Quantum mechanics and visualize the difference between conductor, semiconductor, and an insulator byclassification of solids.
2.   Identify the role of semiconductor devices in science and engineering Applications.
3.   Explore the fundamental properties of dielectric, magnetic materials and energy for their applications.

4.   Appreciate the features and applications of Nano materials.
5.   Understand various aspects of Lasers and Optical fiber and their applications in diverse fields.

UNIT - I: QUANTUM PHYSICS AND SOLIDS

Quantum Mechanics: Introduction to quantum physics, blackbody radiation – Stefan-Boltzmann's law, Wein's and Rayleigh-Jean's law, Planck's radiation law - photoelectric effect - Davisson and Germer experiment –Heisenberg uncertainty principle - Born interpretation of the wave function – time independent Schrodinger wave equation - particle in one dimensional potential box.

Solids: Symmetry in solids, free electron theory (Drude & Lorentz, Sommerfeld) - Fermi-Dirac distribution - Bloch's theorem -Kronig-Penney model – E-K diagram- effective mass of electron-origin of energy bands- classification of solids.

UNIT - II: SEMICONDUCTORS AND DEVICES

Intrinsic and extrinsic semiconductors – Hall effect - direct and indirect band gap semiconductors - construction, principle of operation and characteristics of P-N Junction diode, Zener diode and bipolar junction transistor (BJT)–LED, PIN diode, avalanche photo diode (APD) and solar cells, their structure, materials, working principle and characteristics.

UNIT - III: DIELECTRIC, MAGNETIC AND ENERGY MATERIALS

Dielectric Materials: Basic definitions- types of polarizations (qualitative) - ferroelectric, piezoelectric, and pyroelectric materials – applications – liquid crystal displays (LCD) and crystal oscillators. Magnetic Materials: Hysteresis-soft and hard magnetic materials magnetostriction, magnetoresistance -applications -bubble memory devices, magnetic field sensors and multiferroics. Energy Materials: Conductivity of liquid and solid electrolytes- superionic conductors - materials and electrolytes for super capacitors - rechargeable ion batteries, solid fuel cells.

UNIT - IV: NANOTECHNOLOGY

Nanoscale, quantum confinement, surface to volume ratio, bottom-up fabrication: sol-gel, precipitation, combustion methods – top-down fabrication: ball milling - physical vapor deposition (PVD) - chemical vapor deposition (CVD) - characterization techniques - XRD, SEM &TEM - applications of nanomaterials.

UNIT - V: LASER AND FIBER OPTICS

Lasers: Laser beam characteristics-three quantum processes-Einstein coefficients and their relations-lasing action - pumping methods- ruby laser, He-Ne laser , CO2 laser, Argon ion Laser, Nd:YAG laser-semiconductor laser-applications of laser.

Fiber Optics: Introduction to optical fiber- advantages of optical Fibers - total internal reflection-construction of optical fiber - acceptance angle - numerical aperture- classification of optical fibers-losses in optical fiber - optical fiber for communication system - applications.

TEXT BOOKS:

1. M. N. Avadhanulu, P.G. Kshirsagar & TVS Arun Murthy" A Text book of Engineering Physics"-S. Chand Publications, 11th Edition 2019.

2. Engineering Physics by Shatendra Sharma and Jyotsna Sharma, Pearson Publication,2019

3. Semiconductor Physics and Devices- Basic Principle – Donald A, Neamen, Mc Graw Hill, 4thEdition,2021.

4. B.K. Pandey and S. Chaturvedi, Engineering Physics, Cengage Learning, 2ndEdition,2022.

5. Essentials of Nanoscience & Nanotechnology by Narasimha Reddy Katta, Typical Creatives NANO DIGEST, 1st Edition, 2021.

REFERENCE BOOKS:

1. Quantum Physics, H.C. Verma, TBS Publication, 2nd Edition 2012.

2. Fundamentals of Physics – Halliday, Resnick and Walker, John Wiley &Sons,11th Edition,
                                                                                                    2018.

3. Introduction to Solid State Physics, Charles Kittel, Wiley Eastern, 2019.

4. Elementary Solid State Physics, S.L. Gupta and V. Kumar, Pragathi Prakashan, 2019.

5. A.K. Bhandhopadhya - Nano Materials, New Age International, 1stEdition, 2007.

6. Energy Materials a Short Introduction to Functional Materials for EnergyConversion Storage Aliaksandr S. Bandarenka, CRC Press Taylor & Francis Group

7. Energy Materials, Taylor & Francis Group, 1st Edition, 2022.

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Website: https://siiet.ac.in/

Course: Applied Physics (C112)   **Class: I- B TECH- CSE (IOT)**

Course Outcomes

After completing this course, the student will be able to:

C112.1: Explain quantum behavior of matter and classify the solids into conductors, semiconductors and insulators.   **(Understanding)(L2)**

C112.2: Explain the various semiconductor devices and uses in different engineering applications.   **(Understanding)(L2)**

C112.3: Make use of the fundamental properties of dielectric, magnetic and energy materials for their application**.**   **(Applying)(L3)**

C112.4: Analyze the various fabrication techniques to prepare nano materials and nano sized devices.   **(Analyzing)(L4)**

C112.5: Explain the various laser devices and compare the uses in different fields.

(Evaluating)(L5)

C112.6: Applying the fiber optic principles in communication systems.   **(Applying)(L3)**

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CO's Mapping with PO/PSO

Mapping of course outcomes with program outcomes:

High -3 Medium -2 Low-1

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C112.1	3	2	-	-	-	-	-	-	-	-	-	-
C112.2	3	2	-	-	-	-	-	-	-	-	-	-
C112.3	3	2	-	-	-	-	-	-	-	-	-	-
C112.4	3	-	-	-	-	-	-	-	-	1	-	1
C122.5	3	2	-	-	-	-	-	-	-	1	-	1
C112.6	3	2	-	-	-	-	-	-	-	1	-	1
C112	3	2	-	-	-	-	-	-	-	1	-	1

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CO-PO mapping Justification

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

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, give and receive clear instructions.

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.

C112.1: Explain quantum behavior of matter and classify the solids into conductors, semiconductors and insulators. (Understanding)

	Justification
PO1	student get the knowledge of the Quantum behavior of matter (level 3)
PO2	student can identify the solids into conductors, semiconductors and insulators (level 2)

C112.2: Explain the various semiconductor devices and uses in different engineering applications (Understanding)

	Justification
PO1	student acquire knowledge of working principle of P-N junction diode (level 3)
PO2	Student draw the characteristics of semiconductor photo detectors (level2)

C112.3: Make use of the fundamental properties of dielectric, magnetic and energy materials for their application. (Applying)

	Justification
PO1	Student Utilize the magnetic materials applications to identify metals(lavel3)
PO2	Student Utilize the dielectric, magnetic materials applications to identify materials. (level2)

C112.4: Analyze the various fabrication techniques to prepare nanomaterial and nano sized devices. (Analyzing)

	Justification
PO1	Student get knowledge on nanotechnology(level3)
PO10	Student communicate effectively nanoscience in engineering community(level1)
PO12	Student recognize the nano materials fabrication and characterization techniques in engineering field(level1)

C112.5: Explain the various laser devices and compare the uses in different fields. (Evaluating)

	Justification
PO1	Student get knowledge on laser characteristics(level3)
PO2	Student analyze the different types of laser devices(level2)
PO10	Student can apply laser principles to judge pumping methods (level1)
PO12	Student recognize the laser techniques in engineering field(level1)

C112.6: Applying the fiber optic principles in communication systems. (Applying)

	Justification
PO1	Student get knowledge on fiber optic technology(level3)
PO2	Student classify the optical fibers(lavel2)
PO10	Student communicate effectively fiber optic principles in engineering technology(level1)
PO12	Student recognize the losses associated with optical fibers(level1)

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Lr. No. SIIET/BR22/Academic Calendar/2022/02

Date: 15.12.2022

REVISED ACADEMIC CALENDAR
I B.TECH FOR THE ACADEMIC YEAR 2022-23
(BR22-REGULATIONS)

Dr. I. Satyanarayana,
Principal.

X3

To,
All the HOD's
Sir,

Sub: SIIET (Autonomous)–Academic & Evaluation–Revised Academic Calendar for **I B.Tech - I & II Semesters** for the academic year 2022-2023-Reg.

****

The approved Academic Calendar for **I B.Tech – I & II Semesters** for the academic year 2022-23 is given below.

I-SEMESTER

S. NO	Description	Period From	Period To	Duration
1.	Commencement of I Semester class work (including Induction programme)	03.11.2022		
2.	1ˢᵗ Spell of Instructions	03.11.2022	28.12.2022	8 Weeks
3.	I Mid Examinations	`29.12.2022	04.01.2023	1 Week
4.	Submission of First Mid Term Exam Marks to the Autonomous Section on or before	10.01.2023		
5.	2ⁿᵈ Spell of Instructions	05.01.2023	02.03.2023	8 Weeks
6.	Second Mid Term Examinations	03.03.2023	09.03.2023	1 Week
7.	Preparation & Practical Examinations	10.03.2023	16.03.2023	1 Week
8.	Submission of Second Mid Term Exam Marks to the Autonomous Section on or before	16.03.2023		
9.	I Semester End Examinations	17.03.2023	01.04.2023	2 Weeks

II-SEMESTER

S. NO	Description	Period From	Period To	Duration
1.	Commencement of II Semester class work	03.04.2023		
2.	1ˢᵗ Spell of Instructions (including Summer Vacation)	03.04.2023	10.06.2023	10 Weeks
	Summer Vacation	15.05.2023	27.05.2023	2 Weeks
3.	I Mid Examinations	`12.06.2023	17.06.2023	1 Week
4.	Submission of First Mid Term Exam Marks to the Autonomous Section on or before	23.06.2023		
5.	2ⁿᵈ Spell of Instructions	19.06.2023	12.08.2023	8 Weeks
6.	II Mid Term Examinations	14.08.2023	19.08.2023	1 Week
7.	Preparation & Practical Examinations	21.08.2023	26.08.2023	1 Week
8.	Submission of Second Mid Term Exam Marks to the Autonomous Section on or before	26.08.2023		
9.	II Semester End Examinations	28.08.2023	09.09.2023	2 Weeks
Commencement of Class Work for II B.Tech I Semester – 11.09.2023				

OF EXAMINATIONS
ACE
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Class: IOT   **Semester: I**   **W.E.F-14-11-2022**   **LH:-D-110**

	I 9:40-10:30	II 10:30-11:20	III 11:20-12:10	12:10-12.45	IV 12.45-1.35	V 1.35-2.25	VI 2.25-3.15	VII 3.15-4.00
MON	PPS	M&C	ENG	L U N C H	M&C	ENG	AP	ECSE(T)
TUE	M&C	PPS	AP		EWS/ELCS LAB			ENG(T)/M&C(T)
WED	AP LAB				ENG	PPS	E-CSE	WED
THU	EWS/ELCS LAB				AP	M&C	PPS	PPS(T)/AP(T)
FRI	M&C	AP	ECSE		PPS	AP	PPS	AP(T)/PPS(T)
SAT	M&C	ENG	AP		PPS LAB			M&C(T)/ENG(T)

Course Code	Course Name	Name of the Faculty	Course Code	Course Name	Name of the Faculty
MA101BS	Matrices and Calculus	V.SUJATHA	ME102ES	Engineering Workshop	W.MARUTHI /M.V.B.KALYAN
AP102BS	Applied Physics	P.SRINIVASA CHARY	AP105BS	Applied Physics - Lab	M.MANISHA/M.JANAIAH
CS103ES	Programming for Problem Solving	G.KALYANI	CS107ES	Programming for Problem Solving Lab	G.KALYANI /U.NARESH
EN104HS	English for Skill Enhancement	S.SWAPNA	EN107HS	English Language and Communication Skills Lab	S.SWAPNA/E.PRARTHANA
CS106ES	Elements of Computer Science & Engineering	P.SRILATHA	MC101ES	Environmental Science	K.MOUNIKA

Class In-Charge   **Time Table Coordinator**   **Head of The Department**

Dr. R. YADAGIRI RAO
M.Sc.,B.Ed.,M.Tech(CSE).,Ph.D.
Head of the Department
Department of H&S
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APPLIED PHYSICS: LESSON PLAN

Lecture hour	UNIT	Topic	TA/TM	Reference book
1		Unit wise Introduction of Applied Physics-Syllabus	Lecture-Method/Black board	**T-2**
2		**UNIT –I Quantum Mechanics and Solids** Introduction to quantum physics	Lecture-Method/Black board, Web reference, Video	**T-2, R-1, W-1**, V-1
3		Explanation of Black body radiation	Lecture-Method/Black board	**T-1, R-1**
4		Derivation of of Planck's radiation law	Lecture-Method/Black board	**T-1, T-2**
5		Photoelectric effect explanation with diagram Variation of Intensity and frequency	Lecture-Method/Black board	**T-1, T-2, R-1**
6		De-Broglie's hypothesis and equation for wavelength	Lecture-Method/Black board	**T-1**
7		Verification of dual nature of electron- Davisson- Germer experiment	Lecture-Method/Black board, Video reference,	**T-2, R-1, V-2**
8	**UNIT-I**	Heisenberg's Uncertainty principle and significance of the wave function-Born's explanation	Lecture-Method/Black board	**T-1, R-1**
9		Derivation of Schrodinger's time independent wave equation	Lecture-Method/Black board	**T-1. R-1**
10		Expression for energy and wave function of electron in one dimensional box.	Lecture-Method/Black board, Web reference	**T-1, T-2, W-2**
11		Problems on of Schrodinger's wave equation and energy of electron	Lecture-Method/Black board	**T-1, T-2**
12		Introduction to solids-symmetry in solids	Lecture-Method/Black board	**T-2, R-2,**
13		Free electron theory of solids (Drude &Lorentz, Sommerfeld)-Explanation	Lecture-Method/Black board	**T-2, R-2**
14		Fermi-Dirac distribution function	Lecture-Method/Black board	**T-1, T-2**
15		Kronig-Penny model, E-K diagram	Lecture-Method/Black board	**T-1, T-2, R-2**

16		Effective mass of electron-Derivation and solids classification	Lecture-Method/Black board	**T-1**
17		**UNIT-II- Semiconductor Physics and Devices** Intrinsic semiconductors explanation with diagram	Lecture-Method/Black board	**T-2, R-3**
18		Extrinsic semiconductors explanation with diagram	Lecture-Method/Black board	**T-2, R-3**
19		Hall effect explanation-Hall coefficient and Hall voltage	Lecture-Method/Black board	**T-2, T-3**
20	**UNIT-II**	Explanation of formation of p-n junction diode and energy band diagram	Lecture-Method/Black board	**T-2, R-3**
21		p-n junction diode under forward and reverse bias –energy band diagram	Lecture-Method/Black board	**T-2, T-3**
22		Explanation of Zener diode and its V -I Characteristics	Lecture-Method/Black board	**T-2**
23		Construction, Principle of operation of BJT	Lecture-Method/Black board	**T-2, R-3**
24		LED explanation **with** structure, working and V-I characteristics	Lecture-Method/Black board, Video reference,	**T-2, R-3, W-3**
25		PIN diode working principle, explanation and V-I characteristics	Lecture-Method/Black board	**T-2, V-3**
26		Avalanche diode working principle, explanation and V-I characteristics	Lecture-Method/Black board	**T-2, T-3**
27		Explanation of working principle of solar cell with structure	Lecture-Method/Black board	**T-2, T-3**
28		Solar cell explanation and V-I characteristics and applications	Lecture-Method/Black board	**T-2, R-3**
29	**UNIT-III**	**UNIT-III- Dielectric, Magnetic and Energy** Materials: Basic definitions	Lecture-Method/Black board	**T-1, T-2**
30		Explanation of Polarization and types of polarization	Lecture-Method/Black board	**T-2,**
31		Classification of dielectric materials -Ferroelectrics Piezo electrics and pyro electrics	Lecture-Method/Black board	**T-2**
32		Explanation of LCD and Crystal oscillators	Lecture-Method/Black board	**T-1 T-2**
33		Definitions of Magnetization, permeability and susceptibility Hysteresis curve explanation	Lecture-Method/Black board	**T-2**
34		Magnetostriction and Magneto resistance and Bubble memory devices	Lecture-Method/Black board, Video reference,	**T-2, V-4**
35		Magnetic field sensors and Multi ferroics-Application	Lecture-Method/Black board	**T-2**

36		Conductivity of liquid and solid electrolytes, supersonic conductors	Lecture-Method/Black board,	T-2
37		Materials and electrolytes for super capacitors	Lecture-Method/Black board,	T-2, R-4
38		Explanation of rechargeable ion batteries-LI-ion battery	Lecture-Method/Black board, Video reference	T-2, R-4, V-5
39		Solid fule cell and applications	Lecture-Method/Black board,	T-2, R-4
40	UNIT-IV	**UNIT-IV: Nanotechnology:** Introduction to Nanotechnology – quantum confinement	Lecture-Method/Black board	T-2, R-5
41		Surface to volume ratio-Explanation	Lecture-Method/Black board	T-2, R-5
42		Bottom up fabrication: Sol-gel, Precipitation method	Lecture-Method/Black board	T-2, T-4
43		Combustion method, top up fabrication: Ball milling, PVD Methods	Lecture-Method/Black board	T-2, T-4
44		Physical vapor deposition method	Lecture-Method/Black board	T-2
45		Chemical vapor deposition method	Lecture-Method/Black board, Video reference,	T-2, T-4, V-6
46		Characterization techniques: XRD and SEM	Lecture-Method/Black board	T-2, R-5
47		Characterization technique: TEM and applications of nano materials	Lecture-Method/Black board	T-2, R-5
48	UNIT-V	**UNIT-V- Lasers and Fiber Optics:** Introduction to lasers and characteristics	Lecture-Method/Black board	T-1, T-2
49		Working principle of laser- Three Quantum processes	Lecture-Method/Black board	T-1, T-2
50		Explanation of lasing action, Population inversion and Pumping	Lecture-Method/Black board	T-2
51		Explanation of Ruby laser and Nd: YAG laser with energy band diagram	Lecture-Method/Black board	T-1, T-2
52		Explanation of Argon-ion laser with energy band diagram	Lecture-Method/Black board	T-1, T-2
53		Explanation of Carbon dioxide laser with energy band diagram	Lecture-Method/Black board	T-1, T-2
54		Explanation of He-Ne laser with energy band diagram	Lecture-Method/Black board, Web reference	T-1, T-2, W-4
55		Explanation of Semiconductor laser with energy band diagram-Application	Lecture-Method/Black board	T-1, T-2
56		Introduction to Optical fiber	Lecture-Method/Black board	T-2
57		Total internal reflection explanation with diagram	Lecture-	T-2

58		Derivation for Acceptance angle and cone and Numerical aperture	Lecture-Method/Black board	**T-1, T-2**
59		Classification of optical fibers	Lecture-Method/Black board	**T-2**
60		Losses associated with optical fibers	Lecture-Method/Black board	**T-1, T-2**
61		Optical fiber for communication system	Lecture-Method/Black board, Web reference	**T-2, W-5**
62		Applications of optical fibers	Lecture-Method/Black board	**T-1, T-2**

TEXT BOOKS:

1. Engineering Physics, B.K. Pandey, S. Chaturvedi - Cengage Learing.

2. Applied Physics Dr. TVS Arun Murthy, Dr Avadhanulu- S chand

3. Semiconductor Physics and Devices- Basic Principle – Donald A, Neamen,
   Mc Graw Hill, 4thEdition,2021.
4. Essentials of Nanoscience & Nanotechnology by Narasimha Reddy Katta, Typical Creatives NANO DIGEST, 1st Edition, 2021.

REFERENCES:

1. Quantum Physics, H.C. Verma, TBS Publication, 2nd Edition 2012.

2. Introduction to Solid State Physics, Charles Kittel, Wiley Eastern, 2019.

3. MJ. Singh, Semiconductor Optoelectronics: Physics and Technology, Mc Graw-Hill inc. (1995).

4. Energy Materials, Taylor & Francis Group, 1st Edition, 2022.

5. Fundamentals of Physics – Halliday, Resnick and Walker, John Wiley &Sons,11th Edition, 2018.

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GAP WITHIN THE SYLLABUS-MAPPING TO CO, PO

Boltzmann Distribution law, de-Broglie hypothesis, Schrodinger Time Dependent Wave Equation, Fermi-Dirac Law, Classification of Dielectric materials, Magnetic moment, Magnetic induction, Magnetic susceptibility, Bhor –Magnetron, Laws of Ray-Optics.

Course Outcomes

After completing this topic, the student will be able to:

1. Explain quantum behavior of matter and classify the solids into conductors, semiconductors and insulators. (Understanding)
2. Make use of the fundamental properties of dielectric, magnetic and energy materials for their application. (Applying)
3. Applying the fiber optic principles in communication systems. (Applying)

Mapping of course outcomes with program outcomes:

High -3 Medium -2   Low-1

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	3	2	-	-	-	-	-	-	-	-	-	-
2	3	2	-	-	-	-	-	-	-	1	-	1
3	3	2	-	-	-	-	-	-	-	1	-	1

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GAP BEYOND THE SYLLABUS-MAPPING TO PO/PSO

1. Introducing current Scientific and Technological innovations and development.
2. Students are encouraged to take part in Technical Quizzes and various co-curricular activities to ensure their overall development
3. Teaching at least a few portions giving practical demonstration to create interest among the students
4. Motivate Students Participate Various Science Exhibitions to gaining Practical Knowledge
5. Regular industrial visits help students to know the information useful for knowledge upgradation

Mapping to PO/PSO:

High -3 Medium -2   Low-1

PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	-	-	-	-	2	-	-	-	-	-	-	2
2	-	-	-	-	-	-	-	-	2	-	-	-
3	-	-	-	-	-	-	-	-	-	-	3	-
4	3	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	2	-	-

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WEB REFERENCES:

W-1: https://edisciplinas.usp.br/pluginfile.php/48089/course/section/16461/qsp_chapter10-plank.pdf

W-2: https://www.physicsvidyapith.com/2022/01/particle-in-one-dimensional-box.html

W-3: http://ggn.dronacharya.info/ECEDept/Downloads/QuestionBank/VIIsem/oc_C-Unit-3-LED_Structures.pdf

W-4: https://www.daenotes.com/electronics/microwave-radar/He-Ne-laser

W-5: https://www.scribd.com/document/282231579/Block-Diagram-of-Fiber-Optic-Communiction-System

VIDEO REFERENCES:

v-1: https://www.youtube.com/watch?v=pGerhttps://www.youtube.com/watch?v=Ho7K27B_Uu8 RhxNQJE(video)

V-2: https://www.youtube.com/watch?v=Ho7K27B_Uu8

V-3: https://www.youtube.com/watch?v=WR4559RqRzU

V-4: https://www.youtube.com/watch?v=rJ-ysch4-NM

V-5: https://ul.org/research/electrochemical-safety/getting-started-electrochemical-safety/what-are-lithium-ion

V-6: https://www.youtube.com/watch?v=j80jsWFm8Lc

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LECTURE NOTES

Unit :1 Quantum Physics and Solids:

https://drive.google.com/file/d/1qSqCr0jAwgU811Toag2BPW-NeH6iKvs-/view?usp=sharing

Unit :2 Semiconductors and Devices:

https://drive.google.com/file/d/16HtidqDQyO3yxQcRIlJWZDv95NF99oN-/view?usp=sharing

Unit :3 Dielectric, Magnetic and Energy Materials:

https://drive.google.com/file/d/1eX3STCj7eJ5M9j4xHggQF4o-G1fTM8e6/view?usp=sharing

Unit :4 Nanotechnology:

https://drive.google.com/file/d/11mCvbrWquTgTgHipt5Bk3qUAG3qkEbQ1/view?usp=sharing

Unit :5 Lasers and Fibre Optics:

https://drive.google.com/file/d/1MvTUn7xj4_BjqhqK7eCjJnQmG9K56b72/view?usp=sharing

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POWER POINT PRESENTATION

Semi conductors:

https://docs.google.com/presentation/d/1tm8tAbdhYXFS7D-XNm68cG60di_sOCKK/edit?usp=sharing&ouid=116158123970542554956&rtpof=true&sd=true

Magnetic properties:

https://docs.google.com/presentation/d/1y6g3KfYErRJ4404pC6F-3YcBONZj_dwu/edit?usp=sharing&ouid=116158123970542554956&rtpof=true&sd=true

Optical Fiber:

https://docs.google.com/presentation/d/1RZp4-CI_MmobTe7LpWSoTmi1BQlq0CX4/edit?usp=sharing&ouid=116158123970542554956&rtpof=true&sd=true

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PREVIOUS QUESTION PAPERS

Link:
https://drive.google.com/file/d/1tw74vgRZt0a17vR925UaMkVFurJCMG9A/view?usp=sharing

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X3

BR22

I B. TECH   I – MID Examinations, Dec-2022/ Jan-2023

Set-II

Branch: CIVIL, ECE, CSE(AL&ML), CSE(IOT), AI&DS   Date: 30-12-2022(FN)
Subject: APPLIED PHYSICS   **Marks: 20**   **Time: 2 Hours**

Answer any FOUR Questions. All question Carry Equal Marks   4*5 =20 Marks

1. Derive Eigen values and Eigen functions for a particle in one dimensional box.
(L2) (Understanding)

2.

a. Classify the conductors, semiconductors and insulators on the basis of band theory of solids.
(L4) (Analyze)

b. Explain Fermi-Dirac distribution function equation.
(L5) (Evaluation)

3. Explain the construction and working of light emitting diode.   (L2) (Understanding)

4. Derive an expression for Hall coefficient and Hall mobility?   (L2) (Understanding)

5. Explain formation of depletion region in p-n junction diode and write its applications.
(L5) (Evaluation)

6. Analyze briefly ferroelectrics and piezoelectrics?   (L4) (Analyze)

QUESTION PAPER MAPPING WITH BT
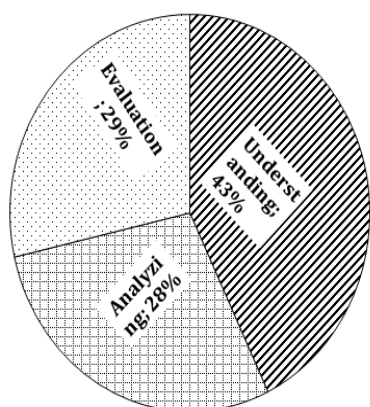
Evaluation :29%
Understanding: 43%
Analyzing:28%

QUESTION PAPER MAPPING WITH CO'S

C112.3;17%
C112.1;33%
C112.2;50%

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X3

BR22

I B. TECH II – MID Examinations, March-2023

Set-I

Branch: CIVIL, ECE, CSE(AL&ML), CSE(IOT), AI&DS   **Date:** 04-03-2022(FN)
Subject: APPLIED PHYSICS   **Marks: 20**   **Time: 2 Hours**

PART-B

Answer any **FOUR** Questions. All question Carry Equal Marks   4*5 =20 Marks

1. Describe liquid crystal displays?   (L2) (Understanding)
2. Discuss sol-gel method to preparation of nanomaterials?   (L6) (Creating)
3. Explain how the nanomaterials are characterized by using TEM?   (L5) (Evaluation)

4. Explain the construction of He-Ne laser with neat energy level diagram.

          (L5) (Evaluation)
5. Write the principle and working of Nd: YAG laser with neat energy level diagram?
          (L2 (Understanding)
6. Derive the relation for acceptance angle and numerical aperture of an optical fiber.
          (L2) (Understanding)

QUESTION PAPER MAPPING WITH BT

QUESTION PAPER MAPPING WITH CO'S
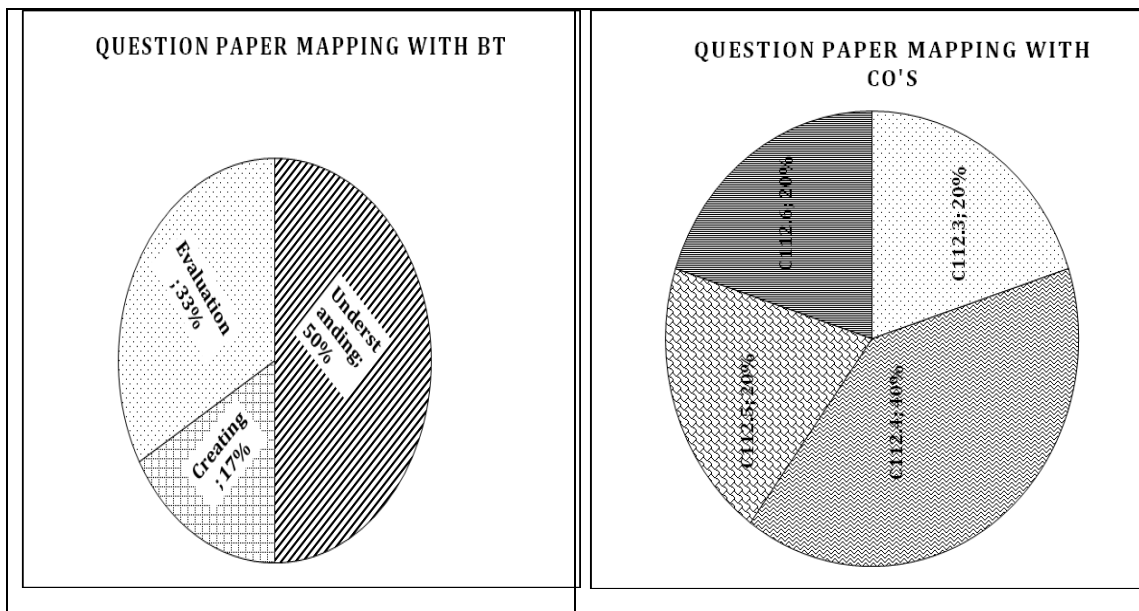
Mid-1 & Mid-2 Key papers Link:
https://drive.google.com/file/d/1ZNqsdl8Ekf27XXBiJ16oSfoCyECiwvRe/view?usp=sharing

Mid-1 & Mid-2 Sample Answer Scripts Link:
https://drive.google.com/file/d/1RCfWLB1KvlquaQMqnklIhfOcrMT7dXJg/view?usp=sharing

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ASSIGNMENT QUESTIONS (MID-I)

APPLIED PHYSICS (SEM-I)

1. Describe the Davisson and Germer's experiment and what it confirms. (Understanding) (L2)

2. Show that the energies of a particle in one dimensional box are quantized. (Understanding) (L2)

3. **a)** Explain Fermi-Dirac distribution function. (L5) (Evaluation)

    b) Classify the conductors, semiconductors and insulators on the basis of band theory of
     solids. (L4) (Analyzing)

4. What is Hall effect? Derive an expression for hall coefficient of a semiconductor.

    (Understanding) (L2)

5. Describe principle, construction and working of solar cell. (Understanding) (L2)

6. Explain polarization and types of polarization.? (Understanding) (L2)

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ASSIGNMENT QUESTIONS (MID-II)

APPLIED PHYSICS (SEM-I)

1. Explain briefly liqui crystal displays(LCD).   (Understanding) (L2)

2. Explain the principle and working of Nd: YAG laser with neat energy level diagram?

   (Evaluation) (L5)

3. Derive the relation for acceptance angle and numerical aperture of an optical fiber.

   (Understanding) (L2)

4. Distinguish between monomode and multimode fiber   Analyzing (L4)

5. Eplain sol-gel method .   (Understanding) (L2)

6. Explain how the nanomaterials are characterized by using TEM ? (Evaluation)(L5)

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I-MID & II-MID AP ASSIGNMENT PROOFS

https://drive.google.com/file/d/1Cpy_E52KMPv_XUlxMsOuVMyAIxpFpXCA/view?usp=sharing

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SCHEME OF EVALUATION WITH CO and BTL MAPPING

SCHEME OF EVALUATION-APPLIED PHYSIS(MID-I) (Set-II)		
Instructions:		
a) Any answer by alternate method should be valued and suitably awarded. b) All answers (including extra, stuck off and repeated) should be valued. Answers with maximum marks must be considered.		
Q n No	**Description of Answer**	**Marks**
1.	To get derivation Energy of electron $E_n = \frac{n^2 h^2}{8mL^2}$ (C112.1) (Understanding)	3
	To get derivation wave function $\psi_n = \sqrt{\frac{2}{L}} \sin \frac{n\pi x}{L}$ (C112.1) (Understanding)	2
2. a.	Classification of solids into the conductors, semiconductors and insulators on the basis of band theory of solids.	3
b.	Fermi-Dirac distribution function explanation (C112.1) (Analyze)	2
3.	Definition of LED (C112.2) (Understanding)	1
	Diagram and Explanation of Construction of LED ((C112.2) (Understanding)	2
	Explanation of Working of LED (C112.2) (Understanding)	2
	Diagram of formation of energy gap (C112.2) (Understanding)	1
4.	To get Hall coefficient equation $R_H = \frac{1}{pe}$ (C112.2) (Understanding)	3
	To get Hall mobility $\mu_H = \sigma R_H$ (C112.2) (Understanding)	2
5.	Diagram of formation of energy gap (C112.2) (Evaluation)	1
	Explanation for the formation of energy gap of p-n junction diode. (C112.2) (Evaluation)	2
	P-n diode application: a) As rectifier, b) as gun diode, c) as tunnel diode D) photodiode	2
6	Definition and Explanation of ferroelectric materials (C112.3) (Analyze)	3
	Definition and Explanation of piezoelectric materials (C112.3) (Analyze)	2
	TOTAL	**20**

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	SCHEME OF EVALUATION-APPLIED PHYSICS (MID-II)(Set-1)	
	Instructions: a) Any answer by alternate method should be valued and suitably awarded. b) All answers (including extra, stuck off and repeated) should be valued. Answers with maximum marks must be considered.	
Qn No	**Description of Answer**	**Marks**
1.	Definition of LCD (C112.3) (Understanding)	1
	Diagram and Explanation of Construction of LCD (C112.3) (Understanding)	2
	Explanation of Working of LCD (C112.3) (Understanding)	2
2.	Definition of sol-gel synthesis method (C112.4) (Creating)	1
	Diagram of sol-gel synthesis method (C112.4) (Creating)	1
	Explanation of preparation of nonmaterials. (C112.5) (Evaluation)	3
3.	Transmission Electron Microscope diagram. (C112.5) (Evaluation)	1
	Explanation of TEM	4
4.	Diagram of He-Ne laser (C112.5) (Evaluation)	1
	Explanation and working of He-Ne laser (C112.5) (Evaluation)	4
5.	Diagram of Nd: YAG laser (C112.5) (Understanding)	1
	Explanation and working of Nd: YAG laser (C112.5) (Understanding)	4
6.	Diagram of Acceptance angle (C112.6) (Understanding)	1
	To get equation $\theta_0 = sin^{-1}(\sqrt{n_1^2 - n_2^2}$) (C112.6) (Understanding)	3
	To get equation NA = $\sin\sqrt{n_1^2 - n_2^2}$ (C112.6) (Understanding	1
	TOTAL	**20**

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APPIED PHYSICS- TUTORIAL TOPICS

S.No	Topic	Teahind Method/Teaching Aid	No. of Sessions Planned	Reference book
1	Derivation of Planck's distribution law	Lecture-Method/Black board/Black board	1	**T-1, T-2**
2	Verification of dual nature of electron-Davisson- Germer experiment	Lecture Method, video	1	**T-2, R-1, V-2**
3	Expression for energy of electron in one dimensional box.	Lecture-Method/Black board Web reference	1	**T-1, T-2, W-2**
4	Free electron theory of metals Fermi-Dirac distribution function	Lecture-Method/Black board		**T-1, T-2**
5	Kronig-Penny model, E-K diagram	Lecture-Method/Black board		**T-1, T-2, R-2**
6	Hall effect explanation	Lecture Method	1	**T-2, T-3**
7	Explanation of formation of p-n junction diode and energe band diagram	Lecture-Method/Black board **Video**	1	**T-2, R-3**
8	LED explanation **with** structure	Lecture-Method/Black board, webreference	1	**T-2 , W-7**
9	Solar cell explanation and V-I characteristics	Lecture-Method/Black board	1	**T-2**
10	Explanation of LCD and Crystal oscillators	Lecture-Method/Black board,	1	**T-2, R-3, W-3**
11	Magnetostriction and Magneto resistance and Bubble memory devices	Lecture-Method/Black board,	1	**T-2, V-4**
12	Explanation of rechargeable ion batteries-LI-ion battery	Lecture-Method/Black board	**1**	**T-2, R-4, V-5**
13	Explanation of Nd:YAG and Ruby laser with energy band diagram	Lecture-Method/Black board	**1**	**T-1, T-2**
14	Explanation of He-Ne laser with energy band diagram		1	**T-1, T-2**
15	Derivation for Acceptance angle and cone and Numerical aperture	Lecture-Method/Black board	**1**	**T-1, T-2**
16	Losses associated with optical fibers	Lecture-Method/Black board	**1**	**T-1, T-2**
17	Optical fiber for communication system	Lecture-Method/Black board	**1**	**T-2, W-5**
18	Applications of optical fibers	Lecture-Method/Black board	**1**	**T-1, T-2**

CSE (IOT):
Result Analysis:

Course Title	APPLIED PHYSICS-I
Course Code	AP102BS
Programme	B. Tech
Year & Semester	I- year, semester-I
Regulation	R-22
Course Faculty	P.Srinivasa Chary Assistant Professor , H&S

Weak Students:

S No	Roll no	Intermediate Marks	Internal-I Status(35Marks)	Internal-II Status (40 Marks)
1	22X31A6908	64%	17	26
2	22X31A6912	64%	16	26
3	22X31A6922	68.5%	19	23
4	22X31A6932	60%	17	28
5	22X31A6941	62%	17	33
6	22X31A6945	63.5%	17	27
7	22X31A6959	61%	17	21
8	22X31A6963	72%	20	30

Advanced learners:

S No	Roll No	Intermediate Marks	Gate Material
1	22X31A6910	96.2%	Quantum Mechanics, Electronics
2	22X31A6929	97%	
3	22X31A6931	96.2%	
4	22X31A6943	96%	
5	22X31A6954	94%	

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Khalsa Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist., Telangana – 501510 Website:
https://siiet.ac.in/

RESULT ANALYSIS ATTHE END OF SEMISTER

Branch: CSE (IOT) Subject: APPLIED PHYSICS
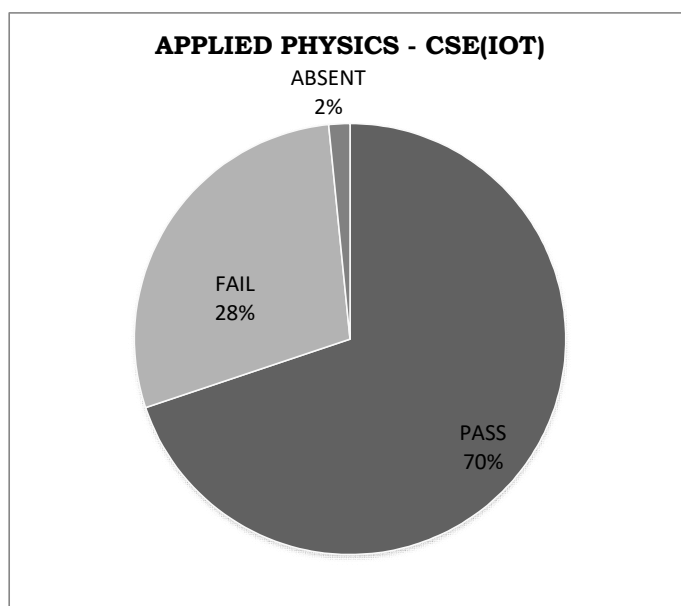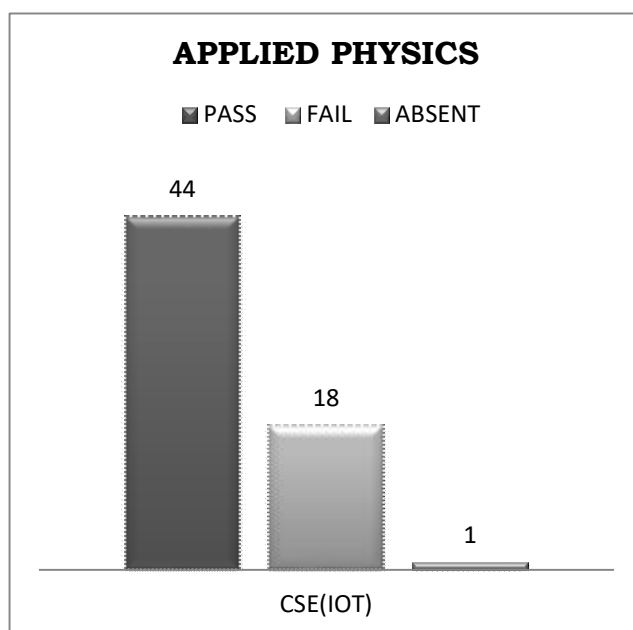
APPLIED PHYSICS

☑ PASS ☑ FAIL ☑ ABSENT

44

18

1

CSE(IOT)

APPLIED PHYSICS - CSE(IOT)

ABSENT
2%

FAIL
28%

PASS
70%

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Khalsa Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist., Telangana – 501510

Website: https://siiet.ac.in/

DEPARTMENT OF HUMANITIES AND SCIENCE
REMEDIAL CLASSES TIME TABLE

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
CSE-A	M&C	PPS	BEE	EG	EC	M&C
CSE-B	BEE	M&C	EG	PPS	EC	BEE
CSE-C	EC	EG	BEE	M&C	PPS	EC

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
DS	M&C	EC	BEE	PPS	EG	EC
CYBER	PPS	M&C	EC	EG	BEE	M&C

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
AIML-A	AP	PPS	M&C	ENG	AP	M&C
AIML-B	M&C	EG	PPS	AP	M&C	EG

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
AI&DS	M&C	ENG	AP	PPS	AP	PPS
IOT	PPS	AP	M&C	EG	M&C	EG

DAY/ PERIOD	MON 4.00-5.00	TUE 4.00-5.00	WED 4.00-5.00	THUR 4.00-5.00	FRI 4.00-5.00	SAT 4.00-5.00
ECE	AP	ENG	M&C	PPS	AP	PPS
CIVIL	EG	AP	M&C	PPS	M&C	EG

Head of the Department
Department of H&S
SRI INDU INSTITUTE OF ENGG & TECH
Sheriguda(V) Ibrahimpatnam (M) R.R. Dist-501 510

PRINCIPAL
Sri Indu Institute of Engineering & Tech.
Sheriguda(Vill), Ibrahimpatnam
R.R. Dist. Telangana-501 510.

Name of the faculty	P. SRINIVAS CHARY	Academic Year:	2022-2023
Branch & Section:	IOT	Examination:	I Internal
Course Name:	APPLIED PHYSICS	Year: I	Semester: I

S.No	HT No.	Q1a	Q1b	Q1c	Q2a	Q2b	Q2c	Q3a	Q3b	Q3c	Q4a	Q4b	Q4c	Q5a	Q5b	Q5c	Q6a	Q6b	Q6c	Obj1	A1
Max. Marks ==>		5			3	2		5			5			5			5			10	5
1	22X31A6901	5						2			4			2						6	5
2	22X31A6902							2						1						8	5
3	22X31A6903	5									1									8	5
4	22X31A6904				1			1			1									8	5
5	22X31A6905	1						2			2									6	5
6	22X31A6906										5									7	5
7	22X31A6907	1			1			1									1			7	5
8	22X31A6908							3			3									6	5
9	22X31A6909	5												1						8	5
10	22X31A6910	5			3						3									6	5
11	22X31A6911	5									5			1			3			6	5
12	22X31A6912					1								2						8	5
13	22X31A6913				3			1			3									6	5
14	22X31A6914				1			2			2									5	5
15	22X31A6915				1			3									6			7	5
16	22X31A6916	5			1			4			1									8	5
17	22X31A6917	4																		8	5
18	22X31A6918	4																		8	5
19	22X31A6919				1	1					3			2						8	5
20	22X31A6920				2			4			2			2						8	5
21	22X31A6921																				5
22	22X31A6922	2			2						3									7	5
23	22X31A6923	2			2			4						3						8	5
24	22X31A6924	1			1						2						2			7	5
25	22X31A6925	4						3												7	5
26	22X31A6926	5						2			3			1						8	5
27	22X31A6927	3			1						4			2						6	5
28	22X31A6928	4			3						1			1						6	5
29	22X31A6929	4			2	2								2						6	5
30	22X31A6930	2									4			1						7	5
31	22X31A6931	5			3						5			5						9	5
32	22X31A6932	2						2												8	5
33	22X31A6933				1			1												8	5
34	22X31A6934	1			3	2					1									8	5
35	22X31A6935	2			3									2						7	5
36	22X31A6936	5									5			2						6	5
37	22X31A6937	2						2						2						7	5
38	22X31A6938				2			1			2			1						8	5
39	22X31A6939	4			3			1			2									8	5
40	22X31A6940	3						2			2									6	5
41	22X31A6941	2									2									8	5
42	22X31A6942	5			3			1			1									8	5
43	22X31A6943	4			3						1									7	5
44	22X31A6944	4			2			2												7	5
45	22X31A6945				2			1												8	5
46	22X31A6946							3			3									8	5
47	22X31A6947							3			3									8	5
48	22X31A6948	5						3			1									7	5
49	22X31A6949	4			1			2			3									7	5
50	22X31A6950							2			1			1						8	5
51	22X31A6951				1			5			2			3						9	5
52	22X31A6952							2			1			2						5	5
53	22X31A6953	5									5									7	5
54	22X31A6954				3			1			1			2						8	5
55	22X31A6955	1			1			1			1									9	5
56	22X31A6956	1						2						3						8	5
57	22X31A6957	5									5			4						9	5
58	22X31A6958	5			3	2					1									7	5
59	22X31A6959				2			2												8	5
60	22X31A6960							2			3			1						8	5
61	22X31A6961	1			2			4												7	5
62	22X31A6962	2			1															9	5
63	22X31A6963	2						3			2			2						6	5

Target set by the faculty / HoD	3.00	0.00	0.00	1.80	1.20	0.00	3.00	0.00	0.00	3.00	0.00	0.00	3.00	0.00	0.00	3.00	0.00	0.00	6.00	3.00
Number of students performed above	23	0	0	20	3	0	12	0	0	18	0	0	5	0	0	2	0	0	56	63
Number of students attempted	39	0	0	32	5	0	34	0	0	39	0	0	24	0	0	4	0	0	58	63
Percentage of students scored more than target	59%			63%	60%		35%			46%			21%			50%			97%	100%

CO Mapping with Exam Questions:

CO - 1	Y			Y															Y	Y
CO - 2							Y			Y						y			Y	Y
CO - 3													Y						Y	Y
CO - 4																				
CO - 5																				
CO - 6																				

Scored >Target %	59%			63%	60%		35%			46%			21%			50%			97%	100%

CO Attainment based on Exam Questions:

CO - 1	59%			63%															97%	100%
CO - 2							35%			35%						35%			97%	100%
CO - 3													35%						97%	100%
CO - 4																				
CO - 5																				
CO - 6																				

CO	Subj	obj	Asgn	Overall	Level						Attainment Level
CO-1	61%	97%	100%	86%	3.00					1	40%
CO-2	35%	97%	100%	77%	3.00					2	50%
CO-3	35%	97%	100%	77%	3.00					3	60%
CO-4											
CO-5											
CO-6											
Attainment (Internal 1 Examination) =				**3.00**							

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities & Sciences
Course Outcome Attainment (Internal Examination-2)

Name of the faculty: P. SRINIVAS CHARY	Academic Year:	2022-2023
Branch & Section: IOT	Examination:	II Internal
Course Name: APPLIED PHYSICS	Year: I	Semester: I

S.No	HT No.	Q1a	Q1b	Q1c	Q2a	Q2b	Q2c	Q3a	Q3b	Q3c	Q4a	Q4b	Q4c	Q5a	Q5b	Q5c	Q6a	Q6b	Q6c	Obj	A2	viva/ppt
Max. Marks ==>		5			5			5			5			5			5			10	5	5
1	22X31A6901	4			5									5			5			10	5	5
2	22X31A6902	2												3			1			10	5	5
3	22X31A6903	5												5			4			10	5	5
4	22X31A6904	3						5									2			10	5	5
5	22X31A6905	4						4						4			1			9	5	5
6	22X31A6906	5			5			4									5			10	5	5
7	22X31A6907	4			3			2						3						9	5	5
8	22X31A6908	3						3						5						10	5	5
9	22X31A6909	5						3						5			3			10	5	5
10	22X31A6910	5			5			4									5			10	5	5
11	22X31A6911	5						5						5			5			10	5	5
12	22X31A6912	4			1			3						3						7	5	5
13	22X31A6913	5									3			3						10	5	5
14	22X31A6914							5						4			4			7	5	5
15	22X31A6915	1			1									5			2			9	5	5
16	22X31A6916	5						4						3			4			8	5	5
17	22X31A6917				1									3			4			9	5	5
18	22X31A6918	5						5			4			4						8	5	5
19	22X31A6919	1			5			5						4						6	5	5
20	22X31A6920	5						3						4						12	5	5
21	22X31A6921	5			4			3									3			9	5	5
22	22X31A6922	2						2									1			8	5	5
23	22X31A6923	5			5			5			5									10	5	5
24	22X31A6924	5			3						3						4			7	5	5
25	22X31A6925	5			4			4						4						9	5	5
26	22X31A6926	4			3			3									4			8	5	5
27	22X31A6927	5			5			5						4						8	5	5
28	22X31A6928				5						5			4			5			9	5	5
29	22X31A6929	5									4			5			5			10	5	5
30	22X31A6930	4									4			4			4			8	5	5
31	22X31A6931							5			5			5			5			10	5	5
32	22X31A6932	4												3			3			8	5	5
33	22X31A6933	4			4			2						1						6	5	5
34	22X31A6934	5									5			5			5			10	5	5
35	22X31A6935	5									4			5						6	5	5
36	22X31A6936	5						5						4			5			9	5	5
37	22X31A6937	3									3			2						7	5	5
38	22X31A6938	5			4			4									4			10	5	5
39	22X31A6939	5			5						4			3						10	5	5
40	22X31A6940	5						4			2						5			7	5	5
41	22X31A6941	1									1						1			10	5	5
42	22X31A6942	5			5			4									5			10	5	5
43	22X31A6943				4			4			4									9	5	5
44	22X31A6944				3			4			5			5						9	5	5
45	22X31A6945	1						1						3			2			10	5	5
46	22X31A6946										2			2						10	5	5
47	22X31A6947	5						4			1			2						8	5	5
48	22X31A6948	5						4						4			4			9	5	5
49	22X31A6949	4									4			4			5			10	5	5
50	22X31A6950	3						3												9	5	5
51	22X31A6951				3			5						4			4			9	5	5
52	22X31A6952	5						4						4			2			10	5	5
53	22X31A6953	5						5						5			5			10	5	5
54	22X31A6954	4			4						3			4						10	5	5
55	22X31A6955	5			1									3			2			8	5	5
56	22X31A6956	5						3			3			3						9	5	5
57	22X31A6957	4			4			4									5			10	5	5
58	22X31A6958	5									5			5			5			10	5	5
59	22X31A6959										1			1			1			8	5	5
60	22X31A6960	5			2			3									5			8	5	5
61	22X31A6961	1			2									1			2			6	5	5
62	22X31A6962	3									1						2			6	5	5
63	22X31A6963	5									1			3			3			8	5	5

Target set by the faculty / HoD	3.00	0.00	0.00	3.00	0.00	0.00	3.00	0.00	0.00	3.00	0.00	0.00	3.00	0.00	0.00	3.00	0.00	0.00	6.00	3.00	3.00
Number of students performed above the target	47	0	0	21	0	0	34	0	0	18	0	0	40	0	0	30	0	0	63	63	63
Number of students attempted	54	0	0	27	0	0	38	0	0	25	0	0	46	0	0	42	0	0	63	63	63
Percentage of students scored more than target	87%			78%			89%			72%			87%			71%			100%	100%	100%

CO Mapping with Exam Questions:

CO - 1																					
CO - 2																					
CO - 3	Y																		Y	Y	y
CO - 4							Y												Y	Y	y
CO - 5										Y			y						Y	Y	y
CO - 6				Y												y			Y	Y	y

% Students Scored >Target %	87%			78%			89%			72%			87%			71%			100%	100%	100%

CO Attainment based on Exam Questions:

CO - 1																					
CO - 2																					
CO - 3	87%																		100%	100%	100%
CO - 4							87%												100%	100%	100%
CO - 5										87%			87%						100%	100%	100%
CO - 6				87%												87%			100%	100%	100%

CO	Subj	obj	aasgn	ppt	Overall	Level
CO-1						
CO-2						
CO-3	87%	100%	100%	100%	97%	3
CO-4	87%	100%	100%	100%	97%	3.00
CO-5	87%	100%	100%	100%	97%	3.00
CO-6	87%	100%	100%	100%	97%	3.00

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal Examination-2)   **3.00**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities & Sciences

Course Outcome Attainment (University Examinations)

Name of the faculty	P. SRINIVAS CHARY		Academic Year:		2022-2023
Branch & Section:	IOT		Year / Semester:		I / I
Course Name:	APPLIED PHYSICS				

S.No	Roll Number	Marks Secured		S.No	Roll Number	Marks Secured
1	22X31A6901	43		36	22X31A6936	34
2	22X31A6902	24		37	22X31A6937	2
3	22X31A6903	27		38	22X31A6938	36
4	22X31A6904	4		39	22X31A6939	35
5	22X31A6905	--		40	22X31A6940	21
6	22X31A6906	46		41	22X31A6941	7
7	22X31A6907	--		42	22X31A6942	34
8	22X31A6908	26		43	22X31A6943	40
9	22X31A6909	28		44	22X31A6944	31
10	22X31A6910	22		45	22X31A6945	9
11	22X31A6911	21		46	22X31A6946	16
12	22X31A6912	17		47	22X31A6947	21
13	22X31A6913	22		48	22X31A6948	28
14	22X31A6914	7		49	22X31A6949	30
15	22X31A6915	25		50	22X31A6950	--
16	22X31A6916	44		51	22X31A6951	25
17	22X31A6917	13		52	22X31A6952	22
18	22X31A6918	A		53	22X31A6953	45
19	22X31A6919	11		54	22X31A6954	38
20	22X31A6920	27		55	22X31A6955	2
21	22X31A6921	30		56	22X31A6956	32
22	22X31A6922	28		57	22X31A6957	39
23	22X31A6923	41		58	22X31A6958	39
24	22X31A6924	31		59	22X31A6959	13
25	22X31A6925	21		60	22X31A6960	14
26	22X31A6926	27		61	22X31A6961	12
27	22X31A6927	40		62	22X31A6962	9
28	22X31A6928	36		63	22X31A6963	27
29	22X31A6929	40				
30	22X31A6930	23				
31	22X31A6931	36				
32	22X31A6932	21				
33	22X31A6933	13				
34	22X31A6934	29				
35	22X31A6935	25				

Max Marks	60

Class Average mark	26		Attainment Level	% students
Number of students performed above the target	31		1	40%
Number of successful students	63		2	50%
Percentage of students scored more than target	49%		3	60%

Attainment level	**2**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Humanities & Sciences

Course Outcome Attainment

Name of the faculty	P. SRINIVAS CHARY		Academic Year:	2022-2023	
Branch & Section:	IOT		Examination:	I Internal	
Course Name:	APPLIED PHYSICS		Year:	I	
			Semester:	I	

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam	University Exam	Attainment Level
CO1	3.00		3.00	2.00	2.30
CO2	3.00		3.00	2.00	2.30
CO3	3.00	3.00	3.00	2.00	2.30
CO4		3.00	3.00	2.00	2.30
CO5		3.00	3.00	2.00	2.30
CO6		3.00	3.00	2.00	2.30
Internal & University Attainment:			3.00	2.00	
Weightage			30%	70%	
CO Attainment for the course (Internal, University)			0.90	1.40	
CO Attainment for the course (Direct Method)			2.30		

Overall course attainment level   **2.30**

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Khalsa Ibrahimpatnam, Sheriguda(V), Ibrahimpatnam(M), Ranga Reddy Dist., Telangana – 501510

ATTENDANCE REGISTER

Link:

https://drive.google.com/file/d/1q4iosrWVHU2KrXU6xgSghUgAzUa5O6sX/view?usp=sharing