



Kot, Bhalwal, Jammu

Model Institute of Engineering
& Technology (Autonomous)
Course File

COURSE FILE

ENGINEERING PHYSICS (BSC-102)

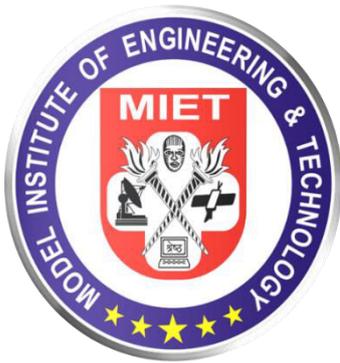
ECE/EE- 1st SEMESTER

ACADEMIC YEAR (2024-25)

Dr. Rajinder Sharma

Professor

Department of Applied Sciences and Humanities



MIET
FUTURE BEGINS HERE....

Department of Computer Science and Engineering

Model Institute of Engineering & Technology (Autonomous)

KotBhalwal, Jammu - 181122

www.mietjmu.in



Dr. Arun K. Gupta Teaching-Learning Centre

Version 1.1



Please Do Not Print Unless Necessary



CONTENTS

S.No	Title
1	Vision & Mission of the Institute and Department
2	Syllabus
3	Course Outcomes
4	CO-PO and CO-PSO Matrix
5	Course Plan
6	Course Assessment Plan
7	Question Bank
8	Sample Assignment
9	Sample Mid Semester Examination
Annexure A	PEOs, POs, PSOs
Annexure B	Bloom's Taxonomy
Annexure C	Assignment Guidelines & Rubrics
Annexure D	Attendance Guidelines



Kot, Bhalwal, Jammu

VISION OF THE INSTITUTE

To create a world - class institution.

MISSION OF THE INSTITUTE

To deliver exceptional value to students, industry & society.

VISION OF THE DEPARTMENT

To become a world class Department of Computer Science Engineering with demonstrated excellence in teaching, research, and innovation.

MISSION OF THE DEPARTMENT

1. To impart high quality instruction in electronics and communication, equipping students with fundamental knowledge and skills to address real world challenges in emerging domains.
2. To integrate academics, research, innovation, and entrepreneurship to create significant values for all stakeholders.
3. To develop meaningful linkages with world class organizations to constantly enhance capacity and capability.

SYLLABUS

Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
							Sessional	Final Exam	Total
BSC-102	Engineering Physics	Core	5	4	1	0	50	100	150
Faculty Details	rajinder.ash@mietjammu.in								

Section-A

Unit 1: Mathematical Physics: Concepts of Del Operator; Gradient of scalar, divergence and Curl of vector, Gauss divergence theorem and Stokes theorem. (10 Hrs)

Unit 2: Electromagnetic Theory: Displacement Current, Maxwell's equations in vacuum and non-conducting medium, Electromagnetic wave propagation in free space (EM wave equations for electric and magnetic fields for free space) and their solutions (plane wave solution), Velocity of electromagnetic waves. (10 Hrs)

Unit 3: Quantum Mechanics: Inadequacies of Classical Mechanics, de-Broglie's concept of matter waves, Wave- packet (Wave-group), Phase and Group velocity, Heisenberg's uncertainty Principle, Experimental illustration of Uncertainty principle using single slit. Wave function: Definition, Interpretation and its significance, Schrodinger's Wave equation (Steady state and time dependent) for one dimension case, Concept of Operators and expectation Values, Applications of Schrodinger's equation (Time Independent) to: a) Particle in a One-Dimensional Box of infinite height, b) Single Step Potential Barrier (16 Hrs)

Section-B

Unit 4: Applied Optics: Interference in thin films (by reflection and transmission of light), Theory of Newton's rings by reflected light, Determination of wavelength and refractive index of monochromatic light by Newton's rings theory, Fraunhofer and Fresnel's diffractions, Fraunhofer diffraction due to a single slit, Plane diffraction grating and its theory for secondary maxima and minima, Unpolarized and polarized light, Double refraction phenomenon, Nicol Prism, Mathematical representation of elliptically and circularly polarized light, Quarter and Half wave plates, Numerical problems. (15 Hrs)

Unit 5: Laser & Fibre Optics: Principal of Laser action, Einstein's coefficients, Ruby Lasers, Propagation of Light in Optical fibres, Acceptance angle and acceptance cone, Numerical Aperture, Single mode and Multimode fibres, Characteristics and General applications of Lasers and Optical fibres, Numerical problems. (5 Hrs)

Text Books

S.No.	Name of the Books	Author	Publisher Name	Edition (Pub. yr.)
1	Vector Analysis	Murray R. Spiegel	McGraw Hill Education	2nd (2017)
2	Fundamentals of Physics	Robert Resnick Jearl Walker, David Halliday	Wiley	10th (2015)
3	Concepts of Modern Physics	Arthur Beiser, Shobhit Mahajan, S. Rai Choudhury	McGraw Hill Education	7th (2017)

Reference Books

S.No.	Name of the Books	Author	Publisher Name	Edition (Pub. Yr.)
1	Engineering Physics	H. K. Malik and A. K. Singh	McGraw Hill Education	2nd (2017)



2	Engineering Physics	S. Sharma and J. Sharma	Pearson India	1st (2018)
---	---------------------	-------------------------	---------------	------------

COURSE OUTCOMES

At the end of the course the student will be able to:	
CO1	Apply the concept of gradient, divergence, and curl to understand advance physics.
CO2	Use Maxwell's equations to describe propagation of electromagnetic waves in a medium.
CO3	Apply the concept of wave function to solve problems related to particle confined in a box.
CO4	Understand the concept of interference, diffraction, and polarization of light.
CO5	Understand and articulate the working principle of lasers and optical fibres

CO-PO AND CO-PSO MATRIX

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



COURSE PLAN

Unit-I Mathematical Physics		
S.No	Topics	Recommended Books
1	Introduction to vectors	Book 1, Ch1
2	Concepts of Del operator, partial derivative, and fields (scalar and vector).	Book 1, Ch.1
3	Gradient of scalar field and physical significance.	Book 1, Ch1
4	Divergence of vector and its expression in term of cartesian coordinates.	Book 1, Ch.1
5	Numerical problems based on divergence	Book 1, Ch1
6	Curl of vector and physical interpretation	Book 1, Ch.1
7	Numerical problems based on Curl of Vector	Book 1, Ch1
8	Stoke's theorem (proof)	Book 1, Ch.1
9	Gauss's divergence theorem (proof)	Book 1, Ch1
10	Numerical problem based on Stokes and Gauss's Divergence theorem	Book 1, Ch.1
Unit-II Electromagnetic Theory		
11	Concept of waves and basic of electromagnetic wave	Book 2, Ch.3
12	Concept and derivation of Displacement current	Book 2, Ch.2
13	Maxwell's equations in vacuum and non-conducting medium (differential and integral forms)	Book 3, Ch.4
14	Derivations of Maxwell's 1 st and 2 nd equation.	Book 2, Ch.2
15	Derivations of Maxwell's 3 rd and 4 th equation.	Book 1, Ch.1
16	Wave equations for electric and magnetic field vectors.	Book 2, Ch.2
17	Velocity of electromagnetic wave & Relation between Eo & Bo.	Book 2, Ch.2
18	Solution of electromagnetic waves	Book 2, Ch.2
Unit- III Quantum Mechanics		
19	Inadequacies of classical mechanics	Book 2, Ch.1
20	de-Broglie's concept of matter waves and de-Broglie wavelength	Book 1, Ch.6
21	de-Broglie wavelength of electron and Davisson and Germer Experiment	Book 3, Ch.1
22	Wave-packet, Phase, and group velocities	Book 2, Ch.1
23	Heisenberg uncertainty principle, Experimental Illustration using single slit.	Book 1, Ch.6
24	Wavefunction- definition, interpretation, and physical significance	Book 3, Ch.1
25	Schrodinger wave equation (Steady state and time dependent) for one-dimensional case;	Book 2, Ch.1
26	Concept of operators and expectation values	Book 1, Ch.6
27	Applications of Schrodinger's equation (Time independent) to (i) Particle in One-Dimensional Box	Book 3, Ch.1
28	(ii) Single Step Potential Barrier	Book 1, Ch.1
29	Numerical problems	Book 2, Ch.1
Unit-IV Applied Optics		
30	Basic of interference	Book 1, Ch.4
31	Interference in thin films (by reflection & transmission of light)	Book 1, Ch.4
32	Theory of Newton's rings by reflected light; Determination of ref. Index and wavelength	Book 1, Ch.4
33	Diffraction, Fraunhofer & Fresnel's diffraction	Book 1, Ch.4
34	Fresnel's half period zones and rectilinear propagation of light	Book 1, Ch.4



35	Fraunhofer diffraction due to single slit	Book 1, Ch.4
36	Plane diffraction grating & its theory for secondary maxima and minima.	Book 1, Ch.4
37	Unpolarised and polarised light and Phenomenon of double refraction	Book 1, Ch.4
38	Geometry of Calcite crystal and Nicol Prism.	Book 1, Ch.4
39	Mathematical representation of elliptically and circularly polarized light;	Book 2, Ch.2
40	Quarter and half wave plate.	Book 1, Ch.1
41	Numerical problems based on quarter and half wave plate	Book 1, Ch.4
Unit-V: Laser and Fibre Optics		
42	Basic of Laser, induced absorption, spontaneous emission, stimulated emission, and Einstein's coefficients	Book 1, Ch.1
43	Ruby laser construction and working	Book 3, Ch.6
44	Propagation of Light in Optical fibres, Acceptance angle, acceptance cone,	Book 3, Ch.6
45	Numerical aperture and single mode and multimode fiber	Book 3, Ch.6
46	Characteristics and General applications of Lasers and Optical fibres numerical problems	Book 3, Ch.7

COURSE ASSESSMENT PLAN

Assessment		Weightage in Marks	CO Mapping
Internal	Mid Semester Examination	20	CO1, CO2, CO3
	Assignment	20	CO4, CO5
	Attendance	10	-
External	Final Examination	100	All COs

QUESTION BANK

S. No.	Question	CO	Bloom s Level
Unit 1			
1	Define gradient of a scalar field and give its physical significance.	CO 1	1
2	Define curl of a vector field. Give its physical significance.		1
3	Define the divergence of a vector field. Give its physical significance.		1
4	State and prove Gauss divergence theorem.		2
5	State and prove Stoke's theorem.		2
6	Show that $\vec{\nabla} \cdot \left(\frac{\vec{r}}{r^3} \right) = 0$, where $\vec{r} = ix + jy + kz$		3
7	Show that $\vec{\nabla} \cdot (\vec{A} + \vec{B}) = \vec{\nabla} \cdot \vec{A} + \vec{\nabla} \cdot \vec{B}$		3
8	Evaluate $\oint_S \vec{A} \cdot d\vec{s}$, Where $\vec{A} = x^2\hat{i} + y^2\hat{j} + z^2\hat{k}$ and S is the surface of the cube bounded by $x=0, x=1, y=0, y=1$ and $z=0$ and $z=1$.		4



9	Evaluate $\oint_S \vec{A} \cdot d\vec{s}$, Where $\vec{A} = 2x^2z\hat{i} - y^2\hat{j} + yz\hat{k}$ and S is the surface of the cube bounded by $x=0, x=1, y=0, y=1$ and $z=0$ and $z=1$.		4
10	Show that $\vec{\nabla}\phi = \vec{r}e^{-r}(2-r)$ if $\phi = (x^2 + y^2 + z^2)e^{-\sqrt{x^2+y^2+z^2}}$		4
Unit 2			
1	Write Maxwell's equations in their differential form in vacuum and explain what each one of these represent	CO 2	1
2	Derive the equation of continuity- $\vec{\nabla} \cdot \vec{J} + \frac{\partial \rho}{\partial t} = 0$.		1
3	Deduce the Faraday's law of electromagnetic induction in differential form.		2
4	Write Maxwell's equations in vacuum and non-conducting medium.		2
5	Using Maxwell's equation, derive wave equation satisfied by \vec{E} and \vec{B} in vacuum.		3
6	Show that in free space, electromagnetic waves travel with the velocity of light. Prove that electromagnetic waves are transverse in nature.		3
7	What is displacement current? Establish that $(\vec{\nabla} \times \vec{B}) = \mu_0 \left(\vec{J} + \epsilon_0 \frac{\partial \vec{E}}{\partial t} \right)$		4
8	Derive a relation between B_0 and E_0 , where the symbols have their usual meanings.		4
Unit 3			
1	Explain Heisenberg's uncertainty principle. Derive its mathematical proof	CO 3	1
2	Discuss phase and group velocities. Show that group velocity of the wave associated with a particle is equal to the velocity of the particle		1
3	Derive the time dependent Schrodinger's wave equation for a free particle		2
4	Write Schrodinger's equation for a particle in a box and obtain an expression for energy eigen values and eigen functions.		2
5	Consider a particle incident on a potential step of height V_0 with energy $E > V_0$. Calculate the co-efficient of reflection and transmission and prove that $R+T = 1$		3
6	Find the expectation value of momentum for the normalized wave function $\psi(x) = \sqrt{\frac{1}{L}} e^{ikx}$ in the interval $-\frac{L}{2} < x < \frac{L}{2}$		3
7	A particle of energy 9eV is incident on a potential step of height 5eV, find the value of reflection coefficient R.		4
8	Derive (i). Energy operator, (ii). Momentum operator and (iii). Hamiltonian operator.		4
Unit 4			
1	Explain the phenomenon of interference in thin films in reflected system. Obtain the conditions for maxima and minima.	CO 4	1
2	What are Newton's rings? How refractive index of liquid can be determined by using Newton's rings method.		1
3	What are Fresnel's half period zones? Explain rectilinear propagation of light		2



	using concept of Fresnel's half zones		
4	Discuss the phenomenon of Fraunhofer diffraction at a single slit and find the relative intensities of the successive maximum.		2
5	Explain diffraction at a plane transmission grating and derive conditions for secondary maxima and minima		3
6	Explain the term polarization of light. Describe the construction, working and uses of Nicol prism.		3
7	What are quarter wave and half wave plates? Derive an expression for their thickness.		4
8	Define circularly and elliptically polarized light. Explain mathematically the production of circularly and elliptically polarized light.		4
9	Find the thickness of a quarter wave plate when the wavelength of light is 5890 \AA and $\mu_o = 1.55$ and $\mu_e = 1.54$		5
10	Calculate the thickness of a doubly refracting crystal required to introduce the path difference of $\frac{\lambda}{2}$ between the O-ray and the E-rays when quarter wave plate $\lambda = 6000 \text{ \AA}$, $\mu_o = 1.55$ and $\mu_e = 1.54$		5

Unit 5

1	Discuss Einstein's co-efficients. Derive relation between them.	CO 5	1
2	Describe the principle of laser action. What are the essential components of a laser?		1
3	Discuss the components of a laser and their functions.		2
4	Describe the construction and working of Ruby laser.		2
5	What is an optical fibre? Explain the terms critical angle, angle of acceptance and numerical aperture of an optical fibre.		3
6	What are the advantages of an optical fibre communication system over the conventional ones? Explain some of the applications of optical fibres.		3
7	The core of an optical fibre is made of silica with refractive index 1.45 and refractive index of cladding is 1.435. Calculate the critical angle and numerical aperture.		4
8	An optical fibre has numerical aperture of 0.20 and a cladding refractive index of 1.59 in air. Determine the acceptance angle for the fibre in water which has refractive index of 1.33.		4
9	In a laser, the energy difference between the two laser levels is 0.117eV. Determine the frequency and wavelength of the radiation.		5
10	In the ruby laser, total number of Cr^{3+} ions excited state are 2.8×10^9 . If the laser emits radiation of wavelength of 7000 Angstrom, calculate the energy of a laser pulse.		5

SAMPLE ASSIGNMENT

Course Name – Engineering Physics

Course Code – BSC-102

Maximum Marks - 20

Due Date: 15th Nov 2024

Question Number	Course Outcomes	Blooms' Level	Maximum Marks	Marks Obtain
Q1	CO4	3-6	10	
Q2	CO5	3-6	10	
Total Marks			20	
Faculty Signature:				
Email:				

Assignment Objectives:

The assignment aims to explore Applied Optics and Laser & Fibre Optics domains. It covers topics such as interference in thin films, Newton's rings theory, Fraunhofer and Fresnel's diffractions, polarization of light, double refraction, Nicol Prism, wave plates, laser principles, fiber optics propagation, numerical aperture, and practical applications.

Assignment Instructions:

1. Group A: 2024A1R001 to 2024A1R005
2. Assessment Rubrics: The evaluation will be done as per the rubrics.
3. Submission Method: All the students will submit their individual hard copy of assignment and upload the same on Camu LMS on or before the Due date. No late submissions will be considered for the evaluation.

Assignment Questions:

Q. No.	Questions	BL	CO	Marks	Total Marks
1	How would you apply the principles of interference in thin films to determine the conditions that lead to the formation of maxima and minima in a reflected system? Using the data from a Newton's rings experiment and the radius of a plano-convex lens, can you apply the formulae or concepts to calculate the wavelength of the light used in the experiment?	3	4	10	10



2	Evaluate the relationships among Einstein's coefficients, illustrating how they are interconnected and their significance in the context of different atomic transitions?	4	5	10	10
---	---	---	---	----	----

SAMPLE MID SEMESTER EXAMINATION

Course Name – Engineering Physics

Course Code – BSC-102

Maximum Marks - 20

Time duration - 90 Mins

Instructions

- Question 1,2 and 4 are mandatory.
- Each question carries 4 marks.

Q.No.	Statement	Bloom's Level	CO Mapping
1	Define curl of a vector field. Give its physical significance. State and prove Stoke's theorem.	Create	CO1
2	Deduce the Faraday's law of electromagnetic induction in differential form.	Remember	CO2
3a	State and prove Stoke's theorem.	Understand	CO1
3b	Show that $\vec{\nabla} \cdot \left(\frac{\vec{r}}{r^3} \right) = 0$, where $\vec{r} = \hat{i}x + \hat{j}y + \hat{k}z$	Understand	CO1
4	Using Maxwell's equation, derive wave equation satisfied by \vec{E} and \vec{B} in vacuum.	Understand	CO2
5a	Explain Heisenberg's uncertainty principle. Derive its mathematical proof	Analyse	CO3
5b	Write Schrodinger's equation for a particle in a box and obtain an expression for energy eigen values and eigen functions	Analyse	CO3

ANNEXURE A

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

1. Successfully apply fundamental domain knowledge in an innovative manner to solve complex problems.
2. Build successful careers in diverse domains.
3. Demonstrate professional growth and development in their chosen field and/or progress towards an advanced degree.
4. Build reputation for excellence, leadership and ethics.

PROGRAMME OUTCOMES(POs)

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
3. 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.
4. 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.
5. Modern tool usage: Select/Create and apply appropriate techniques, resources and modern engineering and IT tools, including prediction and modelling to complex engineering activities, taking comprehensive cognizance of their limitations.



6. The engineer and society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. 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.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the relevant scientific and/or engineering practices.
9. Individual and teamwork: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with the society-at-large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
11. 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.
12. Life-long learning: Recognize the need for and above have the preparation and ability to engage in independent and life-long learning in the broadcast context of technological changes.

PROGRAMME SPECIFIC OUTCOMES (PSOs):

1. Demonstrate competence in designing, implementing and testing an electronics-based system, solving a real-world problem, by utilizing advanced technologies, platforms and tools.
2. Demonstrate fundamental knowledge in digital electronics, communication/ networking, embedded systems, automation, semi-conductor technology besides other sub domains in vogue.

ANNEXURE B

BLOOM'S TAXONOMY

Bloom's Taxonomy is a hierarchical framework used to classify educational objectives and learning outcomes. Each level of Bloom's Taxonomy represents a progressively higher level of cognitive complexity and sophistication. Educators use this framework to design curriculum, assess learning objectives, and create activities that promote higher-order thinking skills. By targeting different levels of Bloom's Taxonomy, educators can ensure a balanced approach to teaching and learning that fosters deep understanding and critical thinking across various subjects and disciplines.

S.No	Level of Learning	Characteristics of Learning	Verbs in Questions or Learning Outcomes
1.	Remembering	This level involves recalling facts, basic concepts, or specific information without necessarily understanding or interpreting it.	List, Identify, Outline
2.	Understanding	At this level, students demonstrate comprehension and grasp of the meaning of information. They can explain ideas or concepts in their own words, interpret data, and summarize information.	Explain, Describe, Interpret, Distinguish
3.	Applying	Students can use acquired knowledge in new situations or contexts. They can apply concepts, principles, or procedures in a different way or to solve problems.	Apply, Calculate, Solve
4.	Analyzing	This level involves breaking down information into its constituent parts and examining relationships between them. Students can identify patterns, organize information, and make connections between ideas.	Classify, Derive, Explain
5.	Evaluating	At this level, students can make judgments about the value or quality of ideas, theories, or solutions based on criteria and standards. They can assess the strengths and weaknesses of arguments, methods, or designs.	Determine, Optimize, Evaluate
6.	Creating	The highest level of Bloom's Taxonomy involves generating new ideas, products, or ways of thinking. Students can design, compose, or invent based on existing knowledge and skills, demonstrating creativity and originality.	Formulate, Design, Create

ANNEXURE C

ASSIGNMENT GUIDELINES

1. Title Page: Use the Standardized Front Page shared by the Department.
2. Font and Spacing: Use a Times New Roman in 12-point size. 1.5 line spacing in the entire document, including the title page, headings, and references.
 1. Margins: Set 1-inch (2.54 cm) margins on all sides of the paper.
 2. Header: Include a header as Assignment and Course Code in the top right corner of each page (except the title page).
 3. Title: Center the title of your assignment at the top of the first page. It should be bold and in title case (capitalize major words).
 4. Headings: Use headings and subheadings to organize your content. Typically, use bold for main headings (e.g., "Introduction") and italics for subheadings (e.g., "Methods").
 5. Page Numbers: Page numbers should be placed in the footer of each page, starting from the second page (the title page is page 1).
 6. Citations and References: Use a consistent APA citation style to cite references.
 7. Pagination and Length: The minimum length of the assignment should be 2000 words excluding the references.
 8. Figures and Tables: If you include figures or tables, provide clear labels and captions.
 9. Figure number should be placed below the Figure as Figure,1 and for the tables, the table number must be mentioned above the table as Table I.
 10. Appendices (if needed): Include appendices for supplementary materials, such as charts, graphs, or lengthy data tables.
 11. Submission Format: Submit your assignment in the soft copy format as PDF and upload it on CAMU as per the submission deadline. Please ensure that the assignment is renamed as Roll No.
 12. Proofreading and Editing: Carefully proofread and edit your assignment for clarity, grammar, and spelling errors before submission.

13. Plagiarism must be below 15 percent for the assignment submitted.

ASSIGNMENT RUBRICS

Parameters	Criteria					Marks Distribution
	1	2	3	4	5	
Writing Skills a) Content	The content was not relevant to the given task	The content was minimally relevant to the given task	The content was generally relevant to the given task	The content was relevant to the given task	The content was very relevant to the given task	2
b) Organization	The assignment is poorly organized and lacked supporting evidence	The organization of the assignment is somewhat organized with minimal supporting evidence	The organization of the assignment is acceptable with some supporting evidence	The organization of the assignment is well organized and supported	The assignment is very well organized and supported	2
c) Grammar-Mechanics-Usage- Spelling	Too many grammatical errors	Numerous grammatical errors	Several grammatical errors	Few grammatical errors	No grammatical errors	1
Knowledge Skills	Student does not demonstrate the subject knowledge	Student demonstrates some grasp of the subject knowledge	Student demonstrates moderate level of the subject knowledge	Student demonstrates sufficient level of the subject knowledge	Student demonstrates sound subject knowledge	5
Overall Presentation/Viva	Unable to answer questions, not prepared and confidence at all	Able to answer questions but not prepared and confidence	Presentation is acceptable but there are some areas that could be improved./ Able to answer questions but with little preparation and confidence	Presentation is of good quality, with a clear effort to present the work professionally and effectively./ Able to answer questions well and slightly confidence and well prepared	Presentation (including code structure, comments, user interface, and documentation) is of exceptionally high quality./ Able to answer questions very well and confidently. Very well prepared	10



Kot, Bhalwal, Jammu

Model Institute of Engineering
& Technology (Autonomous)
Course File

ANNEXURE D

ATTENDANCE GUIDELINES

S.No	Attendance Percentage	Marks to be Allotted
1	Above 90%	100 %
2	Above 85% - 90%	80 %
3	75% -85%	60%
4	Below 75%	0

