University of Computer Studies (Thaton)
2024-2025 Academic Year
First Year (B.C.Sc. / B.C.Tech.)
Lecture Plan

P-1101 Physics **First Semester**

Textbook : "College Physics", Myanmar Edition, by Raymond A.Serway and Chris Viulle
Reference : "College Physics", 11th Edition (Global Edition) by Raymond A.Serway and Chris Vuille
Prerequisite : NIL
Credit Unit : 3 ACUs
Periods : 64 periods for 16 weeks (4 periods * 16 weeks) (1 period – 1 hr)

Week No.	Topics	Period	Remarks
	I. MECHANICS	**16**	
1.	**TOPIC (2) Motion in One Dimension** 2.3 One-Dimensional Motion with Constant Acceleration 2.4 Freely Falling Objects **Summary** **Quizzes** – 6 **Conceptual Questions** – 2, 8 **Examples** – 4, 8 **Problems** – 3, 30, 45	4	
2.	**TOPIC (3) Vectors and Two-Dimensional Motion** 3.1 Displacement, Velocity and Acceleration in Two-Dimensions 3.2 Two-Dimensional Motion 3.3 Velocity Ratio and Three-Dimensional Motion in Vector Notation **Summary** **Quizzes** – 3, 5 **Conceptual Questions** – 2, 10 **Examples** – 5, 7 & 3.3.4, 3.3.5, 3.3.6 **Problems** – 7, 14, 23, 29	4	
3.	**TOPIC (4) Newton's Laws of Motion** 4.2 The Laws of Motion 4.3 The Normal and Kinetic Friction Forces 4.4 Static Friction Forces **Conceptual Questions** – 22, 24 **Examples** – 1, 5, 6 **Problems** – 24, 46	4	Practical I

Week No.	Topics	Period	Remarks
4.	4.5 Tension Forces 4.6 Applications of Newton's Laws 4.7 Two-Body Problems **Summary** **Quizzes** – 9 **Conceptual Questions** – 8, 18 **Examples** – 7, 8, 10 **Problems** – 64, 66	4	Tutorial I & Assignment I
	II. THERMODYNAMICS	**16**	
5.	**TOPIC (6) Momentum, Impulse and Collisions** 6.1 Momentum and Impulse 6.2 Conservation of Momentum **Quizzes** – 1 **Conceptual Questions** – 2, 15 **Examples** – 2 **Problems** – 13, 18, 27	4	
6.	6.3 Collisions in One Dimension 6.4 Glancing Collisions **Summary** **Quizzes** – 3, 6, 7 **Conceptual Questions** – 8 **Examples** – 4, 6, 8 **Problems** – 31, 42, 51	4	Practical II
7.	**TOPIC (12) The Laws of Thermodynamics** 12.1 Work in Thermodynamic Processes 12.2 The First Law of Thermodynamics 12.3 Thermal Processes in Gases **Quizzes** – 1, 2 **Conceptual Questions** – 5, 10 **Examples** – 3, 8 **Problems** – 9, 25	4	
8.	12.4 Heat Engines and the Second Law of Thermodynamics **Summary** **Quizzes** – 3 **Conceptual Questions** – 8 **Examples** – 10, 13 **Problems** – 36, 39, 43, 46	4	Tutorial II & Assignment II
	III. ELECTROMAGNETISM	**28**	

Week No.	Topics	Period	Remarks
9.	**TOPIC (15) Electric Forces and Electric Fields** 15.2 Coulomb's Law 15.3 Electric Field 15.4 Electric Field Lines **Quizzes** – 2 **Conceptual Questions** – 8 **Examples** – 3, 5 **Problems** – 31	4	Practical III
10.	15.5 Conductors in Electrostatic Equilibrium 15.8 Electric Flux and Gauss' Law **Summary** **Quizzes** – 7, 8, 10 **Conceptual Questions** – 14, 15 **Examples** – 6, 7 **Problems** – 50, 51	4	
	TOPIC (17) Current and Resistance 17.3 Currents and Voltage Measurements in Circuits		
11.	**TOPIC (18) Direct-Current Circuits** 18.4 Kirchhoff's Rules and Complex DC Circuits 18.6 Household Circuits 18.7 Electrical Safety **Summary** **Conceptual Questions** – 7, 8 **Examples** – 4, 5 **Problems** – 25, 40, 42	4	Practical IV
12.	**TOPIC (19) Magnetism** 19.3 Magnetic Fields 19.4 Motion of a Charged Particle in a Magnetic Field 19.5 Magnetic Force on a Current-Carrying Conductor **Quizzes** – 1, 2 **Conceptual Questions** – 9, 14, 17 **Examples** – 1, 2, 5 **Problems** – 20, 30	4	Tutorial III & Assignment III
13.	19.6 Magnetic Torque 19.7 Ampere's Law 19.8 Magnetic Force between Two Parallel Conductors **Summary** **Quizzes** – 4, 5, 6 **Conceptual Questions** – 18, 19 **Examples** – 6, 8 **Problems** – 40, 53, 57	4	Practical V
14.	**TOPIC (21) Alternating-Current Circuits and Electromagnetic Waves** 21.1 Resistors in an AC circuit 21.2 Capacitors in an AC circuit 21.3 Inductors in an AC Circuit **Quizzes** – 1 **Examples** – 1, 2, 3 **Problems** – 2, 12	4	Practical Exam

Week No.	Topics	Period	Remarks
15.	21.4 The RLC Series Circuit 21.5 Power in an AC Circuit 21.6 Resonance in a Series RLC Circuit 21.7 The Transformer **Summary** **Quizzes** – 2, 3, 4, 5, 6 **Conceptual Questions** – 2, 5, 9 **Examples** – 4, 5, 6 **Problems** – 27, 34	4	Tutorial IV & Assignment IV
16.	**REVISION**	**4**	
	Total Period	**64**	

Practical (P-1101)

No.	Description	Period	Remark
1.	**APPLICATION OF SPHEROMETER** To study the spherometer and to measure the radius of curvature of spherical surfaces	2	1 apparatus set per 6 students
2.	**MICROMETER SCREW GAUGE** To study a micrometer screw gauge and to measure the thickness of a glass slide, to measure the volume of the steel sphere and the cross-sectional area of the steel wire	2	1 apparatus set per 6 students
3.	**STATIC FRICTION (HORIZONTAL PLANE)** To determine the coefficient of static friction using a horizontal friction board between two given surfaces	2	1 apparatus set per 6 students
4.	**STATIC FRICTION (INCLINED PLANE)** To determine the coefficient of static friction using an inclined plane between two given surfaces	2	1 apparatus set per 6 students
5.	**UNDERSTANDING ON RESISTOR'S COLOR CODES AND VERIFICATION OF OHM'S LAW** (i) To investigate resistor color code to work, (ii) To determine the stated value of a resistor by interpreting the color code indicated on the resistor	2	1 apparatus set per 6 students
	Revision	2	
	Practical Exam	2	

Assessment Plan for the Course

Practical/ Practical Exam	:	20 %
Tutorial	:	10 %
Assignment	:	10 %
Exam	:	60 %