LESSON PLAN

Program Name	DIPLOMA (AUTOMOBILE ENGG.)
Course/Subject Name	Applied Mathematics-I
Course/Subject Code	BS- 101
Course/Subject Coordinator Name	Kharatti Lal

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Applied Mathematics-I	5	40	00	60	-
Reference books			(i)	Elementary Engineering Mathematics by Bs Grewal		
			(ii)	Applied mathematics by Dr. RD Sharma		
			(iii)	Engineering Mathematics by Dass Gupta		
			(iv)	Applied Mathematics, vol I &II by SS Sabharwal & Sunita Jain		

Course Outcomes: After the completion of the course the student will be able to

CO1	Understand the concept of Angles, its measurement and Allied angles
CO2	Understand the concept of compound angles, sub-multiple angles.
CO3	Understand the concept of Differentiation.
CO4	Able to solve the questions of differentiation and its application.
CO5	Understand the Complex Number and their fundamental operations.
CO6	Understand the concept of Partial fractions and Permutation & combination.
CO7	Understand the concept of Binomial theorem.

Teaching Plan:

Lecture No.	Name of topic	Proposed date	Actual date	Remarks
1-5	Angles and its Measurement	09/08/2025 11		
6 - 9	Trigonometrical Ratio of some Allied angles	12/08/2025 14,15		
10 -11	Addition and Subtraction formulae	17/08/2025 19,21,		
12 - 21	Transformation of a product into a sum or a difference and vice-versa	22/08/2025 24,25,		
22 - 27	Trigonometrical ratios of Multiple angles	26/08/2025, 28,		
28-31	Trigonometrical ratios of Sub – Multiple angles	29/08/2025		
32-34	Graphs of Trigonometrical functions	01/09/2025 02,04,		
35-37	Functions and their Limits	08/09/2025 09,12,15,		
37-39	Differentiation	11/09/2025 16,18,19,		
39-43	Applications of Differential Calculus	20/09/2025, 22,25,26		
43-46	Complex Number: Definition , real and imaginary parts of complex Numbers. Polar &Cartesian form and representation of	27/09/2025 03/10/2025, 06/10/2025, 09,13,14,16 ,17,		

	Complex Number.			
46-51	Conjugate, Modulus & Amplitude of Complex Number .	19/10/2025 21,23,24,.		
51-57	Fundamental operations (Addition, Subtraction Multiplication &Division) of Complex Numbers.	27/10/2025 28,30,31,		
57-60	De-movier's theorem, its application.	04/11/2025 06,		
60-62	Partial fractions (linear factors, repeated linear factors)	07/11/2025 10,11		
62-65	Permutations	13/11/2025 14,15,		
65-69	Combinations	16/11/2025 20,21		
70-73	Binomial theorem for positive index (expansion and general form).	23/11/2025 24		
73- 75	Binomial theorem for any index and applications	25/12/2025 26		

Assignments:

Assignment serial	Contents of syllabus covered	Proposed date	Actual date	Remarks
A-I	Trigonometry	05/09/25		

A-II	Differentiation	05/10/25		
A-III	Complex Number	10/11/25		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed date	Actual date	Remarks
CT-I	30% of the syllabus	2nd week of September		
CT-II	Next 30% of the syllabus	3rd week of october		
House Test	80% of the syllabus	2nd week of November		

Teacher's signature

HOD signature

LESSON PLAN FOR ENGG GRAPHICS (SESSION: AUG-DEC 2025) AUTO. ENGG. 1ST SEMESTER						
S.NO.	MONTH	WEEK	DAY	PARTICULARS	SHEETS	REMARKS
1	Aug	1ST	NIL	Orientation programme w.e.f. 01/08/2025 to 07/08/2025	.....	
		2ND	8	Write alphabets and numerical in 7:4 scale (Vertical only) (do this exercise in sketch book). Draw horizontal, Vertical, 30 degrees, 45 degrees, 60 and 75 degrees lines, different types of lines, dimensioning styles using Tee and Set squares/drafter).	SHEET 1	
		3RD	NIL	.....		
		4TH	22,23	Draw some problems on Engineering Plain scale	SHEET 2	
		5TH	29,30	Draw some problems on Engineering Diagonal scale	SHEET 3	
2	Sept	1ST	5,6	Draw some problems on orthographic projections using first angle method of projection having plain and slanting, cylindrical surfaces, ribs and slots.	SHEET 4	
		2ND	12	Draw some problems on orthographic projections using first angle method of projection having plain and slanting, cylindrical surfaces, ribs and slots.	SHEET 5	CT1
		3RD	19,20	Draw some problems on orthographic projections using first angle method of projection having plain and slanting, cylindrical surfaces, ribs and slots.	SHEET 6	
		4TH	26,27	Draw some problems on Isometric view of simple objects having plain and slanting and cylindrical surface (e.g. Cube, Cone and cylinder etc.) by using natural scale.	SHEET 7	
		5TH	NIL	.....		
3	Oct	1ST	3,4	Draw some problems on Isometric view of simple objects having plain and slanting and cylindrical surface (e.g. Cube, Cone and cylinder etc.) by using natural scale.	SHEET 8	
		2ND	10	Draw free hand sketches/ conventional representation of machine elements in sketch book such as thread profiles, nuts, bolts.	SHEET 9	
		3RD	17,18	Draw free hand sketches/ conventional representation of machine elements in sketch book such as studs, set screws, washers & locking arragements	SHEET 10	CT2
		4TH	24,25	Problem based Learning: Given the orthographic views of at least three objects with few missing lines, the student will try to imagine the corresponding objects, complete the views and draw these views in sketch book	SHEET 11	
		5TH	31	Draw basic 2D entities like: Rectangle, Rhombus, Polygon using AutoCAD (Print out shouid be a part of progressive assessment). Draw basic 2D entities like: Circles, Arcs, circular using AutoCAD (Printout should be a part of progressive assessment).	SHEET 12	
		1ST	1	Draw basic 2D entities like: Circular and rectangular array using AutoCAD (Printout should be a part of progressive assessment). Draw blocks of 2D entities comprises of Rectangle, Rhombus, Polygon,Circles, Arcs, circular and rectangular array, blocks using AutoCAD (Print out should be a part of progressive assessment).	SHEET 13	

4	Nov	2ND	7	Draw basic branch specific components in 2D using AutoCAD (Print out should be a part of term work).	SHEET 14	HT
		3RD	14,15	Draw basic branch specific components in 2D using AutoCAD (Print out should be a part of term work).	SHEET 15,16	
		4TH	21,22	Draw basic branch specific components in 2D using AutoCAD (Print out should be a part of term work).	SHEET 17, Revision	

Prepared by

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W/S

Ashish Kumar
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Approved by
Er. FN Kazmi
HOD, MED

01/08/2025

Government Polytechnic Sundernagar

Lesson Plan for the Session August 2025 - December 2025

Subject Name : Introduction to IT Systems (ES102) **Subject Teacher: Dr. Rigzin Angmo**

Sr no	Month	Week	Date	Name of Chapter	Contents to be taught	Remarks
1	August	1	11-08-25	Unit-1 : Basics of Computer System	Block Diagram of Computer System,	
2			18-08-25		General Understanding of various hardware components- CPU, Memory, Display Devices (CRT and LCD Monitors), Keyboard	
3		2	23-08-25	Unit-2 : Software Concepts	Software and its types,	
4			25-08-25		Operating System: Definition, types and function of Operating System, Booting the system (Cold and warm)	
5		3	30-08-25	Unit-3 : Internet Skills	Understanding the terminology of internet-web browser, search engine,	
6	September		01-09-25		Understanding the terminology of internet- world wide web, Types of Networks.	
7		4	06-09-25		Awareness about the government portals (state portals, national portals), Awareness about the institute portals.	
8		5	08-09-25		**Class test 1**	
9			15-09-25	Unit-4 :Working with MS- Word	File Management:- Creating new document, saving a document,	
10		6	20-09-25		File Management:- printing a document	
11			22-09-25		use of Home, Insert, Design Layout ribbons	
		7	27-09-25		Design Layout ribbons.	
12			29-09-25	Unit-5 : Working with MS- Excel	Working with spread sheets, entering data into the cells	
	October	8	04-10-25		merging cells, formula bar,	
13		9	06-10-25		usage of simple functions such as sum, average, min, max, percentage,	
14			13-10-25		**Class test 2**	
		10	25-10-25		usage of simple functions such as round, floor, ceiling,	
15			27-10-25		conditional formatting of cells.	
	November	11	01-11-25	Unit-6 : Information Security	Concept of online frauds, threats of online crime	
16		12	03-11-25		virus attacks and use of antivirus.	
17		13	10-11-25		**Discussion + Revision**	
18			15-11-25		**House Test (Tentative)**	
19		14	17-11-25		**Discussion + Revision**	
20			22-11-25		**Discussion + Revision**	

Subject Teacher

H.O.D
Computer Engg

LESSON PLAN

Program Name	DIPLOMA (Automobile Engg.)
Course/Subject Name	Applied Physics-I
Course/Subject Code	BS103(Th) & BS107(Applied Physics -1 Lab)
Course/Subject Coordinator Name	Gopal Dass
Session.	August-Dec. 2025

Evaluation scheme

S.No.	Subject Name	Study scheme (Hrs/Week)	Marks in evaluation scheme			
			Internal Assessment		External Assessment	
			Theory	Practical	Theory	Practical
1.	Applied physic-I & Applied Physics -1 Lab	3(Th)+1(DCS) +2(Pr.)	40	40	60	60

Reference books	(i)	Text Book of Physics for class XI & XII : N.C.E.R.T. Delhi
	(ii)	Concept of Physics by HC Verma ,Vol I & II ,Bharti Bhawan Ltd. New Delhi
	(iii)	Applied Physics, Vol. I and Vol. II, TTTI Publications, Tata McGraw Hill, Delhi
	(iv)	Engineering Physics by DK Bhattacharya & Poonam Tandan; Oxford University Press, New Delhi

Course Outcomes: After the completion of the course the student will be able to

CO1	Understand the importance of applied physics in describing physical phenomena.
CO2	Employ the knowledge of units and dimensions for various types of measurements.
CO3	Understand the importance of various types of errors while doing measurements.
CO4	Understand the basic forces present in the nature and their effects in daily life.
CO5	Understand energy, work, power and their importance.
CO6	Understand the basic phenomena like elasticity, surface tension, pressure etc.
CO7	Differentiate between heat and temperature and their measurements.

Teaching Plan:

Lecture No.	Name of topic	Actual date	Remarks
1	**Unit-1 Units & Dimensions** Physical quantities & Units - fundamental and derived units,		
2	systems of units (FPS, CGS and SI units)		
3	Dimensions and dimensional formulae of physical quantities (area, volume, velocity, acceleration, momentum, force, impulse, work, power, energy, surface tension, coefficient of viscosity, stress, strain, moment of inertia, gravitational constant.)		

4	Principle of homogeneity of dimensional equations and their applications.		
5	conversion from one system of units to other,		
6	checking of dimensional equations and derivation of simple equations)		
7	Limitations of dimensional analysis		
8	Error in measurement, absolute error, relative error, Error estimation & significant figures.		
9	**Unit-2 Force &motion** Scalar and vector quantities – examples, representation of vector, types of vectors		
10	Addition and Subtraction of Vectors, Triangle and Parallelogram law (Statement only).		
11	Scalar and Vector Product		
12	Resolution of Vectors and its application to inclined plane(Rectangular components) & lawn roller		
13	Force, Momentum, Statement and Derivation of Conservation of linear momentum, its applications such as recoil of gun & rockets		
14	Impulse and its Applications		
15	Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period.		
16	Relation between linear and angular velocity, linear acceleration and angular acceleration (related numerical)		
17	Expression and Applications of Centripetal and centrifugal forces with examples such as banking of roads and bending of cyclist.		
18	**Unit-3 Work, Power & Energy** Work: and its units, examples of zero work, positive work and negative work		
19	Friction: modern concept, types, laws of limiting friction,		
20	Coefficient of friction, methods of reducing friction and its Engineering Applications		
21	Work done in moving an object on horizontal and inclined plane for rough and plane surfaces with its related applications.		
22	Energy and its units: Kinetic energy and gravitational potential energy with examples and their derivation		
23	Mechanical Energy ,Principle of conservation of mechanical energy for freely falling bodies, examples of transformation of energy(examples)		
24	Power and its units, Power and its work relationship calculation of power (numerical problems)		
25	**Unit-4 Rotational motion** Concept of translatory and rotatory motions with examples		
26	Definition of torque and angular momentum and their examples.		
27	Conservation of angular momentum (quantitative) and its		

	examples		
28	Moment of inertia and its physical significance, radius of gyration for rigid body,		
29	Theorems of parallel and perpendicular axes (statements only), Moment of inertia of rod, disc and ring, Sphere(hollow and solid) (Formulae only)		
30	**Unit-5 Properties of matter** Elasticity: definition of stress and strain, different types of moduli of elasticity,		
31	Hooke's law, significance of stress strain curve		
32	Pressure: definition, its units, atmospheric pressure,		
33	gauge pressure, absolute pressure, Fortin's barometer and its applications.		
34	Surface tension: concept and its units, cohesive and adhesive forces, angle of contact,		
35	Ascent Formula (No derivation), applications of surface tension,		
36	effect of temperature and impurity on surface tension		
37	**Unit-6 Thermometry** Concept of heat and temperature		
38	Modes of transfer of heat (Conduction, convection and radiation with examples)		
39	Different scales of temperature and their relationship		
40	Types of Thermometer (Mercury Thermometer, Bimetallic Thermometer)		
41	Platinum resistance thermometer and pyrometer and their uses.		
42	Expansion of solids, liquids and gases,		
43	coefficient of linear, surface and cubical expansions and relation amongst them,		
44	Concept of Co-efficient of thermal conductivity		

Assignments:

Assignment serial	Contents of syllabus covered	Actual date	Remarks
A-1	Units, dimensions ,force and motion		
A-2	Work, power, Energy and rotational motion		
A-3	Properties of matter and thermometry		

House Test/Class Test:

House/Class Test	Contents of syllabus covered	Proposed Date	Actual date	Remarks
CT-I	30% of the syllabus	2nd Week of Sept .2025		
CT-II	Next 30% of the syllabus	3rd Week of Oct. 2025		
House Test	80% of the syllabus	2nd week of Nov. 2025		

Lab Plan(BS107):

Exp. No.	Name of experiment	Actual Date		Remarks
		G-I	G-II	
1	To measure length, radius of a given cylinder and a beaker using a vernier caliper and find the volume of each object.			
2	To determine the diameter of a wire,a solid ball amd thickness of cardboard using a screw gauge.			
3	To determine the radius of curvature of a convex and concave mirror using a spherometer.			
4	To verify the triangle and parallelogram law of forces.			
5	To determine force constant of spring using Hooke's law			
6	To verify the law of conservation of energy Mechanical Energy (PE & KE).			
7	To measure room temperature and temperature of a hot bath using mercury thermometer and convert it into different scales.			
8	To find the moment of inertia of fly wheel.			

Signature of Teacher

Signature of HOD

Government Polytechnic Sundernagar
Lesson Plan for the Session August 2025 - December 2025

Subject Name: Introduction to IT Systems (ES102) Subject Teacher: Dr. Rigzin Angmo

ASSIGNMENTS:

Assignment serial	Contents (Syllabus covered)	Date of Assignment	Remarks
A-1	Unit-1, unit-2		
A-2	Unit-3, unit-4		
A-3	Unit-5, unit-6		

CLASS / HOUSE TEST:

House/class test	Contents (Syllabus covered)	Proposed Date	Actual Date	Remarks
CT-I	30% of syllabus	2nd week of September 2025		
CT-II	Next 30% of syllabus	3rd week of October 2025		
HT	80% of syllabus	2nd week of November 2025		

Lab Plan:

Exp. No.	Name of Experiment	Actual Date		Remarks
		G-I	GII	
1	To identify the various hardware components of computer system.			
2	To assemble hardware components of Computer System			
3	To install Windows OS on computer system.			
4	To study the various features offered on the desktop, creating new folder and new file on the desktop.			
5	To work on different web browsers (Google chrome, internet			

	explorer), setting up default homepage on browser and study the various settings available.			
6	To open search engines (google and yahoo) and search different information using the search engines. Creating an e-mail Account.			
7	Visit various e-governance/digital India Portals and understanding the services offered.			
8	Opening, creating and saving a document, locating files, copying contents in some different file(s), protecting files, giving password protection for a file, Setting margins, tab setting, ruler, indenting, Entering text, cut, copy, paste using tool- bars.			
9	Formatting a document, Creating and editing tables, mail-merge.			
10	Working on MS – EXCEL- Creating a worksheet in Excel. Copy, Move and Merge the cells and Use various Formatting features.			
11	Using formula and functions prepare worksheet for storing subject marks of ten students and perform the following: • Calculate the student wise total and average. • Calculate the subject wise total and average. • Calculate the overall percentage and also individual percentage of the student. • Create a chart for the above.			

Subject Teacher

(Dr. Rigzin Angmo)

H.O.D.