

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. -
Branch	MINING AND MINESURVEYING			Semester	First
Course Code	7220	Course Name	APPLIED SCIENCE		
Course outcome 1	Able to make physical measurements with accuracy by minimizing different types of errors.			Teaching Hrs	Marks
Learning outcome 1	Able to convert the unit of a physical quantity from one system of measurement to another and be conversant with practical units of physical quantities.			06	10
Contents	Unit of a physical quantity, fundamental and derived quantities and their units, different system of Units (CGS, MKS, FPS and SI). Dimensional formulae of physical quantities and its applications.				
Method of Assessment	Internal (Objective test/quiz)				
Learning Outcome 2	Able to measure the dimensions of given object by using a proper instrument.			08	10
Contents	Construction, principle, least count and different errors of vernier calipers and screw gauge.				
Method of Assessment	External Practical				
Learning Outcome 3	Able to estimate error in measurements.			06	10
Contents	Accuracy, Precision of instruments, Errors in measurements (systematic and random), Estimation of errors (absolute error, relative error and percentage error, error propagation), Significant figures.				

Method of Assessment	External Theory exam		
Course outcome 2	Able to elaborate various general properties of atmosphere and Ultrasonic waves	Teaching Hrs.	Marks
Learning outcome 1	Able to describe the working principle of barometer.	06	10
Contents	Pressure and its different units practical application of pressure Pascal's law Atmospheric pressure. Barometer, Types Of Barometer : mercury and aneroid barometer		
Method of Assessment	Internal theory		
Learning Outcome 2	Able to measure RH by Hygrometer	07	10
Contents	Saturated and non-Saturated vaporous Relative and absolute humidity , dew point, fog, mist determination of dew point and RH by Hygrometer		
Method of Assessment	External Practical		
Learning Outcome 3	Able to describe the Production properties and applications of Ultrasonic waves.	07	10
Contents	Longitudinal and Transverse waves, Infrasonic, Audible and Ultrasonic waves, Production of Ultrasonic waves, properties and applications of Ultrasonic waves.		
Method of Assessment	Internal theory		
Course outcome 3	Students will be able to describe principles of photoelectric effect, X-rays, Lasers ,microscope and telescope.	Teaching Hrs.	Marks

Learning outcome 1	Able to explain the concept of photoelectric effect and working of photoelectric cell with sketch.	07	10
Contents	Photo electric effect, laws and characteristics of photoelectric effect, Einstein's photoelectric equation, properties of photons. Construction and working of photoelectric cell (Photoemissive cell), applications of photoelectric cell. Simple numerical problems		
Method of Assessment	Internal Practical/mini-project		
Learning Outcome 2	Able to explain the production of X-rays with its properties and applications.	06	10
Contents	X-rays, Production of X-rays, types of X-ray, X-ray wavelength, simple numerical problems, properties of X-rays, applications of X-rays..		
Method of Assessment	External theory		
Learning outcome 3	Able to derive magnification of microscope and telescope	07	10
Contents	Reflection and, refraction, Snell's law, Total internal reflection, Simple microscope Compound microscope and telescope derivation of their magnification formula		
Method of Assessment	External theory		
Course outcome 4	Able describe and interpret industrial process	Teaching Hrs	Marks
Learning outcome 1	Able to explain properties and uses of metal and alloys	06	10
Contents	HEAVY METALS : Occurrence Properties and engineering uses of heavy metals with special reference to Cu, Fe, Zn, Pb and Al. ALLOYS: Properties and engineering uses of common alloys like Brass, Bronze, German Silver, Duralumin, Solder, Stainless steel, Pressure die casting alloy, bearing alloy.		
Method of	Internal (Objective test/quiz)		

Assessment			
Learning Outcome 2	Able to describe cause of corrosion and their control	06	10
Contents	Meaning of corrosion Types of corrosion Protection against corrosion		
Method of Assessment	External theory		
Learning Outcome 3	Able to describe properties and uses of paint and varnish	08	10
Contents	PAINTS AND VARNISHES: Definition of paints Requisites of good paints Constituents of paints Definition of varnish. Constituents of varnish. Application of paints and varnish.		
Method of Assessment	External Theory		
Course outcome 5	Provide the required prerequisite knowledge of to understand technical subject and impact of pollutants on global environment.	Teaching Hrs.	Marks
Learning outcome 1	Able to describe types of Polymers and uses	06	10
Contents	Polymerization and condensation. Properties and uses of styrene flouro carbons. Properties and uses of ethane, ethylene, PVC, Polythyene , polyester, Polyamides and Bakelite.		
Method of Assessment	External Theory		
Learning Outcome 2	Able to explain types of lubricant based on properties	07	10

Contents	Definition of Adhesives Types of adhesives Engineering application of adhesives Commercially available adhesive for metal to metal and non metals. Definition of lubricants Properties of lubricants. Significance of properties Semisolid lubricants, Greases Solid lubricants – graphite Selection of lubricants		
Method of Assessment	External Practical		
Learning Outcome 3	Able to describe cause of water and air pollution and their control	07	10
Contents	Introduction and chemical toxicology, air and water pollution, control of air and water pollution. Harmful effect of different gases like carbon mono-oxide, carbon dioxide, sulphur dioxide, nitric oxide, nitrous and lead.		
Method of Assessment	External theory		

Remark:

Total teaching hours = 100 (Physics 60 + Chemistry 40)

Total marks = 150 (Physics 90 + Chemistry 60)

(Internal 50 + External 100)

Internal = (Practical 20 + Progressive 10x2=20 (Project/Quiz) +10 Assignment)

External: (Theory 70 +practical 30)

Total CO 05 (Physics 03 + Chemistry 02)

Total LO 15 (Physics 09 + Chemistry 06)