



RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

SEMESTER	:	FIRST SEMESTER
SCHEME	:	JUL.08
NAME OF COURSE (SUBJECT)	:	COMMUNICATION SKILLS
OLD PAPER CODE	:	0014, 0202
NEW PAPER CODE	:	5161
COMMON WITH PROGRAMME (BRANCH)	:	A03, C01, C02 C03, C05, E01, E03, M02, P01, P03, P04, R01, T02, M08, A05, O03.
LECTURE HRS. PER WEEK	:	TH. 06
LECTURE HRS. PER SEMESTER	:	TH. 90

RATIONALE

The wide range of communicative and functional need of English in the evolving global and technical professional environment has more than ever imposed a demand of acquiring proficiency in communication skills in our technicians and diploma pass outs. Besides being a professional language, it also acts as a window to technical and scientific knowledge. Diploma pass outs are required to communicate with personnel belonging to different echelons of authority. Therefore, acquiring proficiency in listening, speaking, reading and writing English is an integral part of professional and technical competence.

Enabling Objectives

The students, after completing the course, will be able to

- Ø Understand slowly delivered spoken material in Indian English.
- Ø Understand general purpose words of English.
- Ø Use general purpose words of English to express himself in speaking reasonably clearly and correctly on routine matters.
- Ø Write reasonably and grammatically correct English.
- Ø Develop a habit of reading with comprehension to achieve an optimum speed of 75 WPM.
- Ø Communicate effectively in a professional environment through speaking and writing to achieve desired objectives.



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S.No.	COURSE CONTENT	Marks
1	<p>Communication Process and its Needs</p> <p>1.1 (i) How to make communication effective (ii) Barriers in communication, Removal of barriers</p> <p>1.2 Grammar and vocabulary for correct English usage. (i) Determiners, Prepositions, Auxiliary verbs and subject-agreement (ii) Rewrite as directed (change voice, correct form of verbs/tenses) (iii) Vocabulary – One word substitution, words often misused and wrongly spelt</p>	10 20
2	<p>Passages of Comprehension</p> <p>2.1 Prescribed passages (six from existing syllabus) i Language of Science ii Desalination or Desalting Process iii Safety Practices iv Non-conventional Sources of Energy v Our Environment vi Entrepreneurship</p> <p>2.2 Writing summary, moral and characterization of any one story from the book prescribed.</p>	20 10

3	<p><i>Business Communication</i> (one question with internal choice)</p> <p>3.1 Principles of effective business correspondence Its parts, mechanics, styles and forms</p> <p>3.2 Application for job, Bio-Data and C.V.</p> <p>3.3 Letter of Enquiry</p> <p>3.4 Placing order</p> <p>3.5 Complaint</p>	10
4	<p>Composition & Translation</p> <p>4.1 Writing paragraphs of 150 words on topics of general interest i.e. pollution, ragging in college, importance of computers, importance of communication skill, importance of science and technology etc.</p> <p>4.2 Translation (Hindi to English and vice-versa).</p>	10 10
5	<p>Unseen passages & Precis writing</p> <p>i Answer the questions based on the passage.</p> <p>ii Give suitable title</p> <p style="text-align: center;">OR</p> <p>iii Writing Precis</p>	10



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S.No.	REFERENCE BOOKS
1	English Conversation Practice - Grant Taylor
2	Practical English Grammar - Thomson & Martinet
3	Communication Skills for Technical Students Book – I, Book – II by M/S Somaiya Publication, Bombay
4	Living English Structure - S. Allen
5	English Grammar, Usage, and Composition - Tickoo & Subramanian, S. Chand & Co. Standard Allen Longman.
6	Essentials of Business Communication - Dr. Rajendra Pal & J.S. Korlahalli , S.Chand & Sons, New Delhi.
7	Effective Business Communication - M.V. Rodriques, Concept Pub. Co., New Delhi.
8	Communication for Business - Shirely Taylor, Longman, England.
9	Communication for Engineers and Professors by P. Prasad, S.K.Kataria and sons publications, New Delhi
10	Technical English Book-II, Somaya Publications, New Delhi



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S.No.	SUGGESTED READINGS
1	<p><u>To enhance the reading skills and generate interest</u></p> <ul style="list-style-type: none">Ø A Brief History of Time: - Stephan Hawking, Bentham Books, Great BritainØ Cosmos: - Carl Sagan, Bentham Books, Great Britain.Ø Ignited Minds: - A.P.J. Abdul Kalam, Penguin Books.Ø India 2020: - A.P.J. Abdul Kalam, and Y.S. Rajan Penguin Books.Ø Beyond the Last Blue Mountain: - J.R.D. Tata, Penguin Books
2	<ul style="list-style-type: none">Ø Life and Times: - Albert Einstein, Bentham Books.Ø Power of Oration: - Abraham Lincoln. <p><u>Faster reading for deriving Pleasure.</u></p>
3	<ul style="list-style-type: none">Ø Interpreter of Maladies: - Jhumpa Lahiri.,Harper & Collins.Ø Short stories by R.K.Narayan,Tagore,Tolstoy,Mulkraj Anand,O.Henry. <p><u>For Vocabulary Building.</u></p> <ul style="list-style-type: none">Ø Word Power made Easy: - Norman Lewis, BloomsburyØ Reading, Spelling, Vocabulary, Pronunciation, Book 1,2 &3: - Norman Lewis.Ø The Joy of Vocabulary: - Levine, Levine & Levine.Ø Roget's Thesaurus of Synonyms and Antonyms.Ø Cambridge English Pronouncing Dictionary: - Danial Jones .Ø Audio- Visual learning resources and multimedia learning material for

pronunciation improvement and listening skills.



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MEMBERS PARTICIPATED IN CURRICULUM REVISION

- 1. Shri M.K.Jain** - **Lecturer S.V.Polytechnic, Indore**
- 2. Shri K.K.Sharma** - **Lecturer Govt. Polytechnic, Balaghat**
- 3. Smt. Vijya Shinde** - **Lecturer Govt. women Polytechnic, Indore**
- 4. Shri D.Gogate** - **Lecturer S.V.Polytechnic, Indore**
- 5. Shri Pravin Ingle** - **Lecturer Govt. women Polytechnic, Indore**
- 6. Dr. Sarla Verma** - **Lecturer SGSITS, Indore**
- 7. Shri Choudhary** - **Lecturer Govt. Polytechnic, Pachore**
- 8. Shri M.R.Jhalavad** - **HRD management expert, Indore**
- 9. Shri R.K. Tripathi** - **Lecturer, S.V.Polytechnic, Bhopal.**
- 10. Smt.Rekha Verma** - **Lecturer, Govt.Women's Polytechnic, Jabalpur.**



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RATIONALE

Curriculum revision needs to be updated and revised in the light of the changes occurring in the life so that they fulfill the objectives.

1. To minimize the poor technical knowledge in the basics of his / her discipline.
2. To improve practical skill on the basis of theoretical knowledge imported.
3. To improve the problem solving skill.

Physical science forms the foundation of engineering, the subject of physics has its importance amongst all the physical sciences, therefore, it is to be taught exclusively to the students of diploma in engineering.



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SNo.	COURSE CONTENT	Marks
UNIT 1	1 UNITS & MEASUREMENT	05
1	1.1 Fundamental and derived units 1.2 Scalar and vector, Basic requirements to represent vector 1.3 Symbols, abbreviation, and proclulation 1.4 Linear measurement by vernier calipers, screw gauge and spherometer 1.5 Angular measurement by angular vernier	
2	2 MOTION 2.1 Motion and its type 2.2 Linear motion (laws and equation) 2.3 Circular motion 2.3.1 Angular velocity and relation with linear velocity 2.3.2 Centripetal acceleration, Centripetal and Centrifugal forces 2.4 Rotatory motion 2.4.1 Axis of rotation 2.4.2 Moment of Inertia, Radius of gyration 2.4.3 Kinetic energy of rotation 2.5 Numerical problems and solution on the topic	05
3	3 Molecular Phenomenon Of Solids, Liquids And Gases 3.1 Postulates Of Molecular Kinetic Theory Of Structure of	05

	<p>matter</p> <p>3.2 Brownian motion</p> <p>3.3 Kinetic and Potential energy of molecules</p> <p>3.4 Kinetic theory of gases</p> <p>3.41 Postulates</p> <p>3.42 Calculation of pressure by Kinetic theory</p> <p>3.43 Prove of different gases law by Kinetic theory.</p>	
4	<p>4 PROPERTIES OF MATTER</p> <p>4.1 Elasticity: Meaning, definition, stress, strain, Hook's law and elastic limit</p> <p>4.2 Surface Tension : Meaning, definition, molecular forces, cohesive and adhesive forces, surface energy, capillary rise and capillary rise method.</p> <p>4.3 Viscosity : Meaning, definition, stream line and turbulent flow, critical velocity, Stock's law.</p> <p>4.4 Numerical problems and solution on the topic.</p>	15
5	<p>5 HEAT</p> <p>5.1 Heat and temperature, concept of heat as molecular motion</p> <p>5.2 Transmission of heat, study state and variable state.</p> <p>5.3 Concept of heat capacity, specific heat and latent heat.</p> <p>5.4 Calorimeter and its uses</p> <p>5.5 Thermodynamics</p> <p>5.51 Relation between heat and work</p> <p>5.52 Mechanical equivalent of heat</p> <p>5.53 First law of thermodynamics and its application</p> <p>5.54 Second law of thermodynamics and its application</p> <p>5.55 Carnot cycle</p> <p>5.6 Numerical problems and solution on the topic.</p>	10
6	<p>6 Heating effect of current and thermoelectricity</p> <p>6.1 Heating effect of electric current: Joule's law, work energy and power in electric circuit, calculation of electric energy.</p> <p>6.2 Thermo electricity</p> <p>6.2.1 Seebach effect and thermoelectric power.</p> <p>6.2.2 Neutral temperature, temperature of inversion and relation between them</p> <p>6.2.3 Thermo electric thermometer and thermo couples.</p> <p>6.3 Numerical problems and solution on the topic.</p>	10
7	<p>7 SOUND</p> <p>7.1 Production of sound waves(Longitudinal and transverse waves)</p> <p>7.2 Progressive and stationary waves</p> <p>7.3 Basic knowledge of refraction , reflection, interference and</p>	10

	<p>diffraction.</p> <p>7.4 Ultrasonic,</p> <p>7.4.1 Audible range, Production of ultrasonic, properties and uses</p>	
8	<p>8 OPTICS AND OPTICAL INSTRUMENTS</p> <p>8.1 Refraction, critical angle and total internal reflection, refraction through lenses and problems</p> <p>8.2 Power of lenses</p> <p>8.3 Spherical and chromatic aberrations</p> <p>8.4 Simple and compound microscope, telescope and derivation for their magnifying power</p> <p>8.5 Numerical problems and solution on the topic.</p>	15
9	<p>9 ELECTROSTATICS AND ELECTROMAGNETIC INDUCTION</p> <p>9.1 Coulomb's law, Electric field intensity, potential.</p> <p>9.2 Capacity, principle of capacitor, types of capacitor, combination of capacitors</p> <p>9.3 Electromagnetic Induction:</p> <p>9.3.1 Faraday's law, Lenz's law</p> <p>9.3.2 Self and mutual inductance</p> <p>9.3.3 Transformer and electric motor, Induction coil</p>	10
10	<p>10 MODERN PHYSICS, BASIC ELECTRONICS</p> <p>10.1 Photoelectric effect, threshold frequency, Einstein- equation, Photo electric cells</p> <p>10.2 Radioactivity : decay constant, Half life, mean life</p> <p>10.3 Properties of nucleus, nuclear mass, mass defect</p> <p>10.4 Production of x-rays, properties and its uses</p> <p>10.5 Thermal emission, semiconductors,</p> <p>10.6 Types of semiconductors</p> <p>10.7 Explanation of conductor, semiconductor and insulators on the basis of band theory</p> <p>10.8 P-N junction, diode as rectifier.</p>	15



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S.NO.	LIST OF EXPERIMENTS
1.	Refractive index of prism (I-d) curve
2.	Refractive index of prism (spectrometer)
3.	Focal length of a convex lens by u-v method
4.	Focal length of a convex lens by displacement method
5.	Verification of Ohm's law
6.	To find out unknown resistance by meter bridge
7.	To find out internal radius of hollow tube by vernier calipers.
8.	To find out volume of given cylinder by screw gauge.
9.	Surface tension by Capillary rise method.
10.	Coefficient of viscosity
11.	Coefficient of Thermal conductivity by searl's method.
12.	Verification of Newton's cooling law.



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S.NO.	LIST OF EQUIPMENTS
1	VERNIER CALIPER
2	SCREW GUAGE
3	OPTICAL BENCH
4	SEARLS APPRATUS FOR "Y"
5	SEARLS APPRATUS FOR "K"



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1.	APPLIED PHYSICS VOL. 1 &2 BY SAXENA AND PRABHAKAR
2.	PHYSICS TTTI PUBLICATION
3.	PHYSICS VOL. 1 &2 BY HALLIDAY AND RESNIC R
4.	ENGINEERING PHYSICS BY GAUR AND GUPTA
5.	PRINCIPLE OF PHYSICS BY BRIJ LAL & SUBRAMANYAN
6.	PHYSICS FOR TECHNICAL EDUCATION BY LS ZEDNOV

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1. Dr U.S. Yadav Sel. grade lecturer SV Polytechnic, Indore
2. Shri Sandeep Pare Guest faculty SV Polytechnic, Indore
3. Dr. P.D. Sharma Govt. Polytechnic, Ujjain



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RATIONALE

As the knowledge of chemistry is essential for a technician, the syllabus of chemistry for the student of first year diploma in all branches of Engg. has been developed in the view of the following abilities required to developed in the students.

- TO develop habit of scientific enquiry.
- Understand the changes in the structure, properties of matter and process involved.
- Unable student to develop essential ability to investigate cause and effect relationship.
- Develop ability to predict results in different applications under given conditions.
- Understand the chemistry of essentials for various Engg. materials
- Comprehend the required prerequisite knowledge for understanding technical subjects.
- Topic like alloy, polymers, lubricants, corrosion, surface chemistry , catalyst have been incorporated with special reference to the requirement of all Engg. Branches.



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S. NO.	COURSE CONTENT	Marks
01.	ATOMIC STRUCTURE AND RADIOACTIVITY : Discovery of electron, proton ,neutron and nucleus. Rutherford's and Bohr's model of an atom. Bohr's scheme of filling the electrons in various orbits. Idea of s,p,d,f orbital .Alpha, Gamma and Beta rays, theory of radio activity, Group displacement law, half life period, numerical problems on half life period, fission and fusion.	10
02.	SURFACE CHEMISTRY AND ITS APPLICATION True solution, colloidal solution and suspension, lyophobic and lyophilic colloids, optical and electrical properties of colloids, coagulation, coagulants, idea about gels and emulsions.	10
03.	ELECTROCHEMISTRY Electrolysis, Faraday's laws of electrolysis, Numerical problems on Faraday's Law, electroplating of copper and nickel.	05
04	COLLIGATIVE PROPERTIES Osmosis & osmotic pressure, Relative vapour pressure and Raoult's law. Internal energy (enthalpy) Entropy, Entropy of fusion free energy, Effect of change in temperature catalysis.	10

05.	<p>CHEMICAL BONDING AND CATALYSIS</p> <p>(A) Bonding: Nature of bonds- Electrovalent, Co-valent, co-ordinate and hydrogen bond.</p> <p>(B) Catalysis : Types , theory characteristic, positive , negative, auto and induced catalyst. Catalytic Promoter, and catalytic inhibitors. Industrial Application of catalysis.</p>	05
06	<p>WATER :</p> <p>Sources of water, types of water, hardness of water, its causes, types and removal, Boiler feed water, harmful – effects of hard water in boiler. Municipal water supply. Numerical on soda lime process. Determination of hardness of water by O. Hener’s, EDTA and soap solution method</p>	10
07.	<p>METALS AND ALLOYS :</p> <p>Physical and chemical properties of metals, copper, iron, aluminum, tin, nickel. General principal of metallurgy, minerals/ ores, ore dressing, roasting ,smelting, bassemerisation, fluxes, purification . Explanation of alloying purposes, methods of alloying, composition and uses of alloy like brass, bronze, duralium, German silver, gun metal, solder, stainless steel, casting and bearing alloy.</p>	10
08.	<p>Ionization, Ph value corrosion and protection</p> <p>Arhenius theory of ionization, factors affecting ionization. pH meaning (numerical), Buffer solutions and Buffer actions, choice of indication (acidimetry and alkalimetry). Explanation of corrosion, types of corrosion, factors effecting corrosion, corrosion control (protection against corrosion), metal and organic coating for corrosion control.</p>	06
09	<p>Glass, Cement and Refractory:</p> <p>Glass: Basic raw materials for glass, composition and manufacture of glass, varieties of glass and annealing of glass,.</p> <p>Cement : Constituting compounds in cement, Composition of Portland Cement, its manufacture, setting and hardening of cement.</p> <p>Refractories : Meaning, characteristics , use of common refractory materials.</p>	06

10.	<p>HIGH POLYMERS, RUBBER AND INSULATORS:</p> <p>Polymerization and condensation, classification of plastics, Compounding and Moulding constituents of plastics. Preparation Properties and uses of PVC, polyethene, polystyrene, polyamides, polyesters , Bakelite. Synthetic fibers – nylon, rayon, decron, and polyesters.</p> <p>Definition characteristics , classification and properties of insulators. Glass, wool and thermocole.</p> <p>Idea about rubber and vulcanization .</p>	06
11.	<p>Lubricants, Paints and Varnishes:</p> <p>Lubricants: Meaning , type and theory of lubricants, properties of a good lubricants, Flash and fire point and cloud point, emulsification number, viscosity.</p> <p>Paints and Varnishes : Meaning, ingredients and characteristics of good paints and varnishes, their engineering applications</p>	06
12.	<p>FUELS, FIRE EXTINGUISHERS AND EXPLOSIVES :</p> <p>Classification of fuel, gross and net calorific value, Determination of a solid fuel by bomb calorimeter , octane and octane number. Proximate analysis of fuel, its utility, crude petroleum, products of fractional distillation .</p> <p>Fire extinguishers – Description and use.</p> <p>Explosives – Meaning, types, characteristic and use of explosives. Name Dynamite, lead azide, T.N.T., Picric acid, R.D.X.</p>	06
13.	<p>Pollution and control :</p> <p>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.</p>	10



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S. NO.	LIST OF EXPERIMENTS
01.	To identify one Anion and Cation in a given sample.
02.	Determination of flash point and fire point of a given sample of oil by Abel's apparatus.
03.	Determination of viscosity by Red Wood Viscometer no. 1 and no.2.
04.	Redoximetry Titration : a. Percentage of Iron in given sample of alloy. b. Determination of strength of ferrous ammonium sulphate. c. Determination of strength of anhydrous ferrous sulphate and ferrous sulphate.

05.	Determination of hardness of water by : a. EDTA Method and Soap Solution Method
06.	Determination of solid content in the given sample of water.
07.	Determination of percentage of moisture in the given sample of coal by proximate analysis.



**RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA,
BHOPAL**

SEMESTER : **FIRST SEMESTER**
SCHEME : **JUL.08**
NAME OF COURSE (SUBJECT) : **CHEMISTRY**
OLD PAPER CODE : **0015, 0016, 0017**
NEW PAPER CODE : **6032**
COMMON WITH PROGRAMME : **A03, C01, C02 C03,C05, E01, E03, M02, , P01,**
(BRANCH) **P03, P04, R01, T02,**

LECTURE HRS. PER WEEK : **TH. 06 , PR. 04**
LECTURE HRS. PER SEMESTER : **TH. 90 , PR. 60**

S. NO.	REFERENCE BOOKS
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1.	PHYSICAL CHEMISTRY – B AHL AND TULI
2.	INORGANIC CHEMISTRY – SATYAPRAKASH
3.	MODERN TEXT BOOK OF APPLIED CHEMISTRY – DR. G. C. SAXENA, JAIN PRAKASHAN, INDORE
4.	APPLIED CHEMISTRY - DR. G. C. SAXENA, DEEPAK PRAKASHAN, GWALIOR
5.	APPLIED CHEMISTRY – SHRIVASTAVA & SINGHAL, PBS PUBLICATION, BHOPAL
6.	ENGINEERING CHEMISTRY – UPPAL
7.	ENGINEERING CHEMISTRY – RAO AND AGARWAL
8.	ENGINEERING CHEMISTRY – P.C. JAIN
9.	POLYMER CHEMISTRY – O.P. MISHRA
10.	APPLIED CHEMISTRY – H.N. SAHNI, DEEPAK PRAKASH

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1. Dr. G.C. Saxena, Selection Grade Lecture (I/C Science & Humanities), S.V. Polytechnic, Indore
2. Dr. (Smt.) S. Verma , Selection Grade Lecture, S.V. Polytechnic, Indore
3. Sh. R.P. S. Chouhan, Lecturer, Ujjain Polytecnic.



**RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA,
BHOPAL**

SEMESTER	:	FIRST SEMESTER
SCHEME	:	JUL.08
NAME OF COURSE (SUBJECT)	:	MATHEMATICS
OLD PAPER CODE	:	2160, 0209, 0210
NEW PAPER CODE	:	6033
COMMON WITH PROGRAMME (BRANCH)	:	A03, C01, C02 C03,C05, E01, E03, M02, , P01, P03, P04, R01, T02.
LECTURE HRS. PER WEEK	:	TH. 08
LECTURE HRS. PER SEMESTER	:	TH. 120

RATIONALE

Mathematics forms backbone for all technologies and hence occupies an important place in the curriculum of polytechnic education. The subject is equally important for the future self development of Polytechnic students. In designing the curriculum for foundation course the admission level to Polytechnics has been considered as 10th Board examination and mathematical needs of Technical subject have been given due consideration. To understand difficult concepts in higher engineering courses and to solve many problems of design and development a good background in mathematics is necessary. Keeping in view this requirement for engineering diploma programmes.



**RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA,
BHOPAL**

SEMESTER : **FIRST SEMESTER**
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NAME OF COURSE (SUBJECT) : **MATHEMATICS**
OLD PAPER CODE : **2160, 0209, 0210**
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COMMON WITH PROGRAMME : **A03, C01, C02 C03,C05, E01, E03, M02, , P01,**
(BRANCH) **P03, P04, R01, T02.**
LECTURE HRS. PER WEEK : **TH. 08**
LECTURE HRS. PER SEMESTER : **TH. 120**

S.No.	COURSE CONTENT	Marks
01	ALGEBRA : 1.1 Permutation - Meaning of factorial n - Permutation of 'n' dissimilar thing taken 'r' at a time, 1.2 Combination - Combination of n dissimilar things taken 'r' at a time, 1.3 Binomial Theorem - Statement of the theorem for positive integer - General Term, Middle term, Constant term 1.4 Partial Fractions - Define a proper-improper fraction - Break a fraction into partial fraction whose denominator contains Linear, Repeated linear and Non repeated quadratic factors. 1.5 Determinant - Concept & principles of determinants - Properties of determinant - Simple examples. 1.6 Complex Numbers - Algebra of Complex Numbers - Polar form	15

02	<p>TRIGONOMETRY :</p> <p>2.1 Allied angles.</p> <p>2.2 Trigonometrical ratios of sum and difference of angles, (Only statement)</p> <p>2.3 Sum and difference of trigometric ratios (C-D formula)</p> <p>2.4 Multiple angles (Only double angle and half angle)</p> <p>2.5 Properties of triangle (without proof)</p>	10
03	<p>MATRIX :</p> <p>3.1 Definition of Matrix.</p> <p>3.2 Types of Matrix.</p> <ul style="list-style-type: none"> - Row, Column, Square, Unit, Upper and lower triangular, Symmetric & Skew Symmetric, Singular and non Singular Matrices. <p>3.3 Adjoint of a Matrix.</p> <p>3.4 Inverse of a Matrix.</p>	10
04	<p>CO-ORDINATE GEOMETRY :</p> <p>4.1 Co-ordinate System : Cartesian and Polar.</p> <p>4.2 Distance, Division, Area of a triangle.</p> <p>4.3 Locus of a point and its equation.</p> <p>4.4 Slope of St. Line</p> <ul style="list-style-type: none"> - Angle between two St. lines. - Parallel and perpendicular St. lines. <p>4.5 Standard and general equation of St. line. Point of intersection of two st lines.</p>	10
05	<p>STATISTICS :</p> <p>5.1 Measures of Central tendency (Mean, Mode, Median)</p> <p>5.2 Measures of Dispersion (Mean deviation, standard deviation)</p>	10
06	<p>DIFFERENTIAL CALCULUS :</p> <p>6.1 Define constant, variable, function.</p> <p>6.2 Value of the function</p> <p>6.3 Concept of limit of a function.</p> <p>6.4 Definition and concept of differential coefficient as a limit.</p> <p>6.5 Standard results.</p> <p>6.6 Derivatives of sum, difference, product, quotient of two functions.</p> <p>6.7 Diff. coeff. of function of a function.</p> <p>6.8 Diff. coeff. of implicit function.</p> <p>6.9 Logarithmic Differentiation.</p> <p>6.10 Differential coeff. of Parametric function.</p>	15
07.	<p>INTEGRAL CALCULUS :</p> <p>7.1 Definition as a inverse process of differentiation</p>	15

	<p>7.2 Standard Results (including inverse function)</p> <p>7.3 Methods of Integration</p> <ul style="list-style-type: none"> - Substitution - Integration by parts - Breaking up into partial fraction <p>7.4 Concept of Definite Integral</p>	
08.	<p>VECTOR ALGEBRA :</p> <p>8.1 Concept of Vector and Scalar Quantities.</p> <p>8.2 Different types of vectors.</p> <p>8.3 Addition and subtraction of vectors.</p> <p>8.4 Components of a vector</p> <p>8.5 Multiplication of two vectors</p> <ul style="list-style-type: none"> - Scalar Product - Vector Product - Applications (Work done, power & reactive power) 	15



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LECTURE HRS. PER WEEK	:	TH. 08
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EQUIVALENCY

New paper code is equivalent to old paper code of respective branch.



**RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA,
BHOPAL**

SEMESTER	:	FIRST SEMESTER
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OLD PAPER CODE	:	2160, 0209, 0210
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LECTURE HRS. PER WEEK	:	TH. 08
LECTURE HRS. PER SEMESTER	:	TH. 120

S.NO	REFERENCE BOOKS
1.	MATHEMATICS FOR POLYTECHNICS - PREPARED BY T.T.T.I. BHOPAL VOL. I AND II
2.	DIFFERENTIAL CALCULUS - GORAKH PRASAD
3.	INTEGRAL CALCULUS - GORAKH PRASAD
4.	CO-ORDINATE GEOMETRY - BY S.L. LONI
5.	ENGINEERING MATHEMATICS - DR. S.K. CHOUKSEY (M.P. HINDI GRANTH AKADAMI) & MANOJ SINGH
6.	MATHEMATICAL STATISTICS - BY RAY AND SHARMA
7.	HIGHER ENGINEERING MATHEMATICS - BY B.S. GREWAL

MEMBERS PARTICIPATED IN CURRICULUM REVISION

1.	Dr. S.K. Chouksey	-	Lecturer	-	Women's Polytechnic, Indore
2.	Smt. Anita Rane	-	Lecturer	-	S.V. Polytechnic, Indore
3.	Smt. K. Bhagwat	-	Lecturer	-	S.V. Polytechnic, Indore
4.	Smt. S.D. Wagh	-	Lecturer	-	S.V. Polytechnic, Indore
5.	Dr. B.P. Raghuwanshi	-	Lecturer	-	Polytechnic, Ujjain
6.	Shri Manoj Singh	-	Lecturer	-	S.V. Polytechnic, Bhopal
7.	Shri A.K. Shakyawar	-	Lecturer	-	Polytechnic, Khandwa

