

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM****LEVEL NAME : I – GENERAL STUDIES****COURSE CODE : EN 1101****COURSE TITLE : ENGLISH****PREREQUISITE : NIL****TEACHING SCHEME: TH :03; TU :00 PR :02; TOTAL CREDITS: 05 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	80	20	100	NIL	25@	NIL	125
MIN.	32	--	40	---	10	---	---

(# - External & Internal Assessment ; @ - Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : 03 HRS.****TIME ALLOTTED FOR PROGRESSIVE TEST : 01 HR.****❖ RATIONALE :**

The basic structure of English through grammar enhances holistic development as an individual as well as individual's role in industry. Proficiency in English language (reading, writing, speaking & listening) enables a technician to develop good rapport with others and also helps him/her in his/her professional career as well as in society throughout.

❖ OBJECTIVES :**After completing this course students will be able–**

- To lay a strong foundation of English through grammar.
- To teach correct structure of word and sentences.

❖ SKILLS :

1. To cultivate the taste of good reading and to be able to comprehend.
2. To develop effective communication skills in students.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		MARKS	HOURS
1.	Word Building		20	10
	1.1	Formation of words: Affixes, Derivatives, Compound Words, Synonyms and Antonyms, Homophones, Homonyms , one word substitution		
	1.2	Verbs – Mood and Tense		
	1.3	Articles		
	1.4	Punctuation and capitalization		
	1.5	Parts of speech		
2.	Developing Foundation Of Grammar Into Concrete Structures		20	16
	2.1	Active and Passive voice		
	2.2	Narration : Direct Indirect speech		
	2.3	Degree of Comparison		

	2.4	Simple, Complex and Compound Sentences		
	2.5	Affirmative and negative sentences		
	2.6	Same words used as different part of speech. Question tag, correction of errors, remove “Too”, use of “If Not Unless”		
3.	Learning To Read Fluently and To Develop Insight Through Prose and Poetry.		15	08
	A	Prose :		
	3.1	Three Questions : by Leo Tolstoy		
	3.2	Vision for 2020 :by Dr. A.P.J. Abdul Kalam		
	3.3	National unity, Nation and Nationalism : by Jayprakash Narayan		
	3.4	The leader of men : by Siddharth Choudhury		
	B	Poetry :	10	08
	3.5	Where the mind is without fear : by Rabindranath Tagore		
	3.6	The Human Season :by John Keats		
	3.7	Piano : by D. H. Lawrence		
3.8	Voice of the unwanted girl: by Sujata Bhatt.			
4.	Learning To Write Elaborately (This skill aims at improving writing skill.)			
	4.1	Paragraph writing: • Principles of writing paragraph. • Selecting the topic. • Topic sentences • Arranging the ideas into coherent order • Concluding the paragraph.	05	03
	4.2	Essay writing : • Unity of thought • Topic sentence • Logical order • Length • Conclusion	10	03
Total			80	48

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab. Work/Assignments	Hrs.
1.	Vocabulary Building by identifying words	02
2.	Special exercise on verbs and tenses	02
3.	Tense buster – All levels (To be performed in language laboratory)	08
4.	Issues in English (To be performed in language laboratory)	06
5.	Reading and making notes	02
6.	Skit (dramatization) with moral	04
7.	Enhancing communication abilities • Conversation – formal, informal • Reading with appropriate pace and pause • Expressing clearly & audibly while interacting • Speaking fluently and confidently • Writing skills – summarizing poems	08

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Continuous assessment of Term Work

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. Lecture method
2. Improved lecture method.
3. Q & A technique.
4. Demonstration
5. Seminars

❖ **SUGGESTED LEARNING RESOURCES :**

1. **PRINT :** Text books/Reference books/Manuals.
2. **NON PRINT :** CDs / PPT / Transparencies / Charts / softwares

C. SPECIFICATION TABLE :

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
1.	Word Building	30	12	08	10	30
2.	Types Of Sentences	30	12	08	10	30
3.	Learning To Read Fluently and					
a	Prose	22	10	08	4	22
b	Poetry	15	5	06	4	15
4.	Learning To Write Elaborately	23	07	06	10	23
Total		120	46	36	38	120

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Prism	N. P. Sharma (Macmillan Publication) - 2005	1403-928282
2.	The essentials of English Grammar	Holy faith	
3.	Grammar	Wren & Martin	81-219-0009-3
4.	Contemporary English Grammar – Structure & Composition	David Green	033392183-6

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Ms. S.S.Raza	Lecturer	G.P.Nagpur
2.	Mrs.Rupali Londhe (Expert)	Asst.Prof.	PCE Nagpur
3.	Mrs.Bhumika Agrawal (Expert)	Asst.Prof.	PIET Nagpur
4.	Ms.H.Qureshi	Lecturer	G.P.Nagpur
5.	Ms.S.R.Pillai	Lecturer	G.P.Nagpur

(Member Secretary PBOS)

(Chairman PBOS)

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COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM****LEVEL NAME : I - GENERAL STUDIES****COURSE CODE : EN 1102****COURSE TITLE : COMMUNICATION SKILLS****PREREQUISITE : NIL****TEACHING SCHEME: TH : 03; TU : 00; PR : 02; TOTAL CREDITS: 05 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	80	20	100	Nil	Nil	25#	125
MIN.	32	--	40	Nil	Nil	10	---

(# - External & Internal Assessment ; @ - Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : 03 HRS.****TIME ALLOTTED FOR PROGRESSIVE TEST : 01 HR.****❖ RATIONALE :**

In this present competitive scenario, the demand of the organization is changing rapidly and therefore the responsibility of diploma holder is no different; The individual skills are not sufficient to work at his best. An engineer needs to develop a vast amount of communication skills for his/her overall development and excellent career building to meet the challenges in profession. Communication skills help him towards achievement of perfection.

❖ OBJECTIVES :

After completing this course students will –

- Learn modern concept of communication.
- Acquire certain qualities necessary in industry.
- Know office –industry working.

❖ SKILLS :

1. To acquire skills to learn efficiently.
2. To enable the students to have broader vision.
3. To face problems with confidence.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		MARKS	HOURS
1.	COMMUNICATION		10	10
	1.1	Definition, Elements, Process, Types, Verbal-Non verbal, Upward-Downward, formal-informal.		
	1.2	Barriers of communication		
	1.3	Selection of proper channels of communication		
	1.4	Non verbal communication in detail: Body language, Eye contact, Dress and appearance, Colour, Sound, Pictorial representations.		

2.	INCULCATION OF VARIOUS GENERIC SKILLS AMONGST FUTURE ENGINEERS		10	08
	2.1	Role of receptive and productive skills in enhancing communication		
	a b	- Listening and reading skills – Importance of listening skills levels, Types of reading, Phonetics, IPA. - Speaking and writing – Importance of pronunciation, Importance of debate.		
3.	AREAS OF SELF DEVELOPMENT		20	10
	3.1	Aims of self development, acquiring self confidence.		
	3.2	Motivation – Introduction, Definition, Types with examples.		
	3.3	Presentation skills – Parameters, Appearance, use of body language, Eye contact, Content preparation, Depiction of interest of audience.		
	3.4	Time management – Process of time planning,		
	3.5	Groups – Types of group, difference between team & group. Leadership qualities.		
4.	DEVELOPMENT OF SOFT SKILLS		07	02
	4.1	Interview Techniques: Preparation , Behavior during interview, post interview		
	4.2	Group discussion: Being the first member, how to make a general discussion, to give a concrete shape to discussion, purpose.	08	02
5.	BUSINESS CORRESPONDENCE : FORMAL DRAFTING		20	12
	5.1	Letters: Job application & leave letters., sales letter, enquiry letter, order letter, complaint letter.		
	5.2	Report writing: Progress, Accident, Trouble, Feasibility		
	5.3	Notices, Circular, Memorandum.		
6.	COMPREHENSION		05	04
	6.1	Precise, Development of short story		
Total			80	48

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab. Work/Assignments	Hrs.
1.	Informal – Face to Face conversation.	02
2.	Extempore / Impromptu	02
3.	Debate	02
4.	Mock Interview	02
5.	Paper reading - Comprehending	02
6.	Demonstration of appropriate body language in a given situation.	02
7.	Listening and summarizing	02
8.	Oral presentation	02
9.	Practicing official drafting	04
10.	Phonetic/ Transcription	02
11.	Group Discussion	02
12.	Study skill success (to be performed in language lab using software)	08

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Continuous assessment during practical and Term end oral examination.

SUGGESTED IMPLEMENTATION STRATEGIES :

1. Lecture method
2. Improved lecture method.
3. Q & A technique.
4. Demonstration
5. Case study
6. Seminars

SUGGESTED LEARNING RESOURCES :

1. **PRINT :** Text books/Reference books/Manuals/Journals.
2. **NON PRINT :** CDs / PPT / Transperencies / Charts

C. SPECIFICATION TABLE :

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
1.	Communication	15	05	02	08	15
2.	Inculcation of various general skills.	15	05	02	08	15
3.	Areas of self development	30	12	08	10	30
4.	Development of soft skills	22	08	04	10	22
5.	Business Correspondence Formal Drafting	30	10	08	12	30
6.	Comprehension	08	02	02	04	08
Total		120	42	26	52	120

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Professional communication skills	S.R.Pravin, S.Chand Publications	81-219-2092-02
2.	Developing communication skill	Macmillan publications	0333929195
3.	Business communication	Urmila Rao	81-8318-438-3
4.	Secret of face to face communication	Peter Urs., Bender; Macmillan publication	0333937139
5.	English for practical purpose	Z.N.Patil; Macmillan publication	0333935098
6.	Technical communication principles and practices	Meenakshi Raman and Sangita Sharma, Oxford University Press.	0-19-5668049
7	Business communication	Meenakshi Raman and Prakash Singh, Oxford University Press	0-19-567695-5
8	Effective English communication	Krishna Mohan and Raman Tata MCGraw Hills.	13978-0-19-566804-9
9	Modern Commercial Correspondance	R.S.Pillai & Bhagwati, S.Chand Co.	812190519-2

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Ms. S.S.Raza	Lecturer	G.P.Nagpur
2.	Mrs.Rupali Londhe (Expert)	Asst.Prof.	PCE Nagpur
3.	Mrs.Bhumika Agrawal (Expert)	Asst.Prof.	PIET Nagpur
4.	Ms.H.Qureshi	Lecturer	G.P.Nagpur
5.	Ms.S.R.Pillai	Lecturer	G.P.Nagpur

(Member Secretary PBOS)

(I/C - English)

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COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/EE/EC/PK/MT****LEVEL NAME : I-GENERAL STUDIES****COURSE CODE : IT 1101****COURSE TITLE : IT Applications****PREREQUISITE : NIL****TEACHING SCHEME: TH :00; TU :00; PR :02; TOTAL CREDITS: 02 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	25@	--	--	25
MIN.	--	--	--	10	--	--	10

(# - External & Internal Assessment ; @ - Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : NIL****TIME ALLOTTED FOR PROGRESSIVE TEST : NIL****❖ RATIONALE :**

In the present era of Information Technology, it has become vital to acquire knowledge about computer system as well as to acquire the skills to operate computer system. Knowledge of office automation related software is essential for every one. This course is designed considering the requirements of the office related jobs. MS-Office software is meant for office automation which covers editing letters, spreadsheet design and preparation of presentation. Internet is becoming very important for searching the information and for sending the E-mail.

❖ OBJECTIVES :**After completing this course students will –**

- Understand computer system
- Operate commands for specific purpose
- Use the system software Windows
- Understand & use word for correspondence
- Use Excel for accounting
- Use presentation software for preparing slide & shows.
- Use internet for accessing information and sending E-mail

❖ SKILLS :

- Effective use of office tools for preparing documents ,worksheet & presentation
- Effective Use of internet facilities .

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		MARKS	HOURS
1.	Computer Fundamentals		---	---
	1.1	Overview to computer system		
	1.2	Types of Computer		

	1.3	Hardware and Software		
	1.4	Types of Software		
	1.5	Operating System		
	1.6	Application Software		
	1.7	Representation of Data		
	1.8	Components of a Computer		
	1.9	CPU		
	1.10	Memory		
	1.11	Input and Output Devices		
	1.12	Keyboard		
	1.13	Mouse		
	1.14	Monitors		
	1.15	Printers		
	1.16	Storage Devices		
	1.17	Types of Storage Devices		
	1.18	Magnetic Storage Devices		
	1.19	Optical Storage Devices		
	1.20	Computer Networks		
	1.21	Uses of Networks		
	1.22	Types of Networks.		
2.	Microsoft Windows Operating System			
	2.1	Starting OS		
	2.2	Exploring the Desktop		
	2.3	The Start Button		
	2.4	Moving and Sizing Windows		
	2.5	Arranging Windows		
	2.6	Shortcuts		
	2.7	Shutting Down OS		
	2.8	OS Tools		
	2.9	My Computer		
	2.10	Windows Explorer		
	2.11	Copying Files		
	2.12	Using Send To	---	---
	2.13	Creating		
	2.14	Renaming and Deleting Folders		
	2.15	Copying		
	2.16	Deleting		
	2.17	Moving and Renaming Files		
	2.18	Find Files and Folders		
	2.19	Wordpad		
	2.20	Opening and Saving File		
	2.21	Editing Document and Formatting Text		
	2.22	Previewing and Printing Document		
	2.23	Recycle Bin		
	2.24	Help		
3.	Microsoft Word			
	3.1	Introduction to word Processing		
	3.2	Introduction to Microsoft Word		
	3.3	Creating and Formatting a Document		
	3.4	Features of MS Word	---	---
	3.5	Auto text and AutoCorrect		
	3.6	Grammar and Spell Check		
	3.7	Changing Font and Type Sizes		

	3.8	Inserting and Sizing Graphics		
	3.9	Opening and Saving a Document		
	3.10	Printing and Previewing a Document		
	3.11	Finding and Replacing Text		
	3.12	Creating Tables.		
4.	Microsoft Excel			
	4.1	Introduction to Electronic Spreadsheet		
	4.2	Introduction to Microsoft Excel Creating and Formatting a Worksheet		
	4.3	Features of MS Excel		
	4.4	Inserting Data into Worksheet	---	---
	4.5	Entering Formulas and Functions		
	4.6	Types of Charts		
	4.7	Creating Charts		
	4.8	Moving and Sizing Charts		
	4.9	Copying a Chart		
	4.10	Using AutoFill		
5.	Microsoft Powerpoint			
	5.1	Introduction to Presentation Program		
	5.2	Introduction to Microsoft PowerPoint		
	5.3	Creating a Presentation		
	5.4	Features of PowerPoint		
	5.5	Auto Content Wizard, Viewing and Editing a Presentation	---	---
	5.6	Inserting Pictures and Clip Art		
	5.7	Opening, Saving and Printing a Presentation		
	5.8	Creating and Enhancing a Table		
	5.9	Slide Layouts		
	5.10	Modifying the Slide and Title Master		
	5.11	Adding Transition and Build Effects.		
6.	Internet And E-Mail Applications			
	6.1	What is Internet?		
	6.2	History and Uses of Internet		
	6.3	Connecting to Internet		
	6.4	Dial Up Access and Direct Access		
	6.5	Domains and Addresses		
	6.6	DNS and IP Addresses	---	---
	6.7	Using the World Wide Web		
	6.8	Internet Browser and Browsing the Web		
	6.9	Services on Internet		
	6.10	E- Mail Services		
	6.11	Search Engines		
	6.12	Chat Services.		
Total			---	---

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	To demonstrate different parts of computer system.	2
2.	To create icons, folders & shortcut.	2
3.	To use Taskbar and start button	2
4.	To use My computer & its options.	2
5.	To manage files using windows explorer.	3
6.	To use Ms-Word & execute various options.	3

7.	To create Table in Ms-Word.	3
8.	To use Excel for preparing worksheet.	3
9.	To prepare a chart using Excel.	3
10.	To prepare presentation using Power points.	3
11.	To use internet for accessing the information.	3
12.	To send an E-mail	3
Total		32

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Continuous assessment of Term Work and Term end practical examination.

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. **Lecture method**
2. **Improved lecture method.**
3. **Q & A technique.**
4. **Demonstration**

❖ **SUGGESTED LEARNING RESOURCES :**

1. **PRINT :** Text books/Reference books/Manuals/Journals.
2. **NON PRINT :** CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : (NOT APPLICABLE)

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
Total			-NA-			

D. REFERENCE & TEXT BOOKS

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Understanding Computers	By Rajgopal	
2.	Introduction to Computers	By Rajaraman	
3.	The ABC'S of Internet	By Crumlish.	
4.	Teach yourself Excel 97 in 24 hrs.	By Lois patterson.	
5.	MS office 2000 No Experience Required	By Courter.	
6.	Quick Reference Guide to MS Office 2000	By FIALA	
7.	ABCS of WINDOWS 98	By Crawford	
8.	WINDOWS 98 Complete	By Sybex	
9.	Windows 2000 Professional	By Mark Minari Todd Phillips	

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Shri. R.V.Yenkar	Head, ETX	Govt.Poly.Nagpur
2.	Dr.V.H.Mankar	Lecturer, ETX	Govt.Poly.Nagpur
3.	Mrs. H.R.Bhusari	Lecturer, ETX	Govt.Poly.Nagpur
4.	Ms. V.A.Khandekar	Lecturer, IT	Govt.Poly.Nagpur

(Member Secretary PBOS)

(Chairman PBOS)

GOVERNMENT POLYTECHNIC, NAGPUR.

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COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CIVIL ENGINEERING****LEVEL NAME : GENERAL STUDIES****COURSE CODE : CE 1101 (\$)****COURSE TITLE : CONSTRUCTION MANAGEMENT****PREREQUISITE : NIL****TEACHING SCHEME: TH :04; TU :02; PR :00; TOTAL CREDITS: 06 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	80	20	100	NIL	25@	25#	150
MIN.	32	--	40	---	10	10	--

(# - External & Internal Assessment ; @ - Internal Assessment only; \$- Award of class course)

TIME ALLOTTED FOR TERM EXAM : 03 HRS.**TIME ALLOTTED FOR PROGRESSIVE TEST : 01 HR.****RATIONALE :**

Management has now become an integral part of all the walks of life. Construction Industry, responsible for National development, relies on civil engineer to achieve this task. The role of civil engineer is to economize the construction cost. Thus, it is inevitable on the part of all engineers and especially civil engineering students to learn about the 'Resource' Management (i.e. Manpower, Machinery, Material and Money) and to use the advanced techniques of optimization of 'Cost' and 'Time' for a project. It is also necessary for the students, to understand the importance of construction, 'safety', 'communication' and the aspect of 'Human Relations' in achieving the 'Construction Economy.'

**OBJECTIVES :****After completing this course students will–**

- Be able to appreciate the importance of Construction Management and 'Construction Industry.'
- Get acquainted with the functions and principles of Management
- Be able to do effective planning and scheduling of construction works through Bar chart and Network Methods of Planning and Scheduling
- Able to update the schedules according to the requirements of project.
- Appreciate the importance of 'Communication', 'Safety Precautions Measures' and Human Relation in the present scenario of today's Business activity
- Learn about advanced techniques of project Management

**SKILLS :****After completing this course students will –**

3. Efficient and effective supervision of civil construction works.
4. Planning and Phasing of resource requirements according the requirements of project.
5. Read, draw and update Bar charts and the C.P.M and P.E.R.T Network forms of schedules.

6. Exercise effective control on the inventory in Store and monitor storekeeping activity
7. Motivate the workforce through effective communication and exhibit right type of leadership in building good human relations.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER	MARKS	HOURS
1.	INTRODUCTION	06	04
	1.1 Construction Industry and it's nature		
	1.2 Role of construction industry in National development		
	1.3 Special characteristics of Civil Engineering works		
	1.4 Construction agencies and their functions		
	1.5 Agencies giving assistance to construction industry.		
	1.6 Role of Engineer in achieving Construction Economy.		
	1.7 Role of contractor in achieving construction Economy.		
2.	FUNDAMENTALS OF MANAGEMENT	06	04
	2.1 What is Management? Definition of Management.		
	2.2 Necessity of Management in construction industry		
	2.3 Evolution of management – Role of F.W. Taylor, Henry Fayol and Gilberth		
	2.4 Principles of Management (14 Principles of Henry Fayol)		
	2.5 Function of management (Planning, Organizing, Directing, Controlling, Coordinating, Supervising)		
	2.6 Application of Principles of management to Civil Engineering works.		
	2.7 Social and Public responsibility of Management		
	2.8 Levels of management and Management structure		
	2.9 Administration and Management		
3.	ORGANISATION	08	06
	3.1 Organisation theory, Definition of Organisation		
	3.2 Need of organization		
	3.3 Principles of organization		
	3.4 Types of organization, their merits, demerits. • Line • Line and staff • Functional		
	3.5 Typical organizational charts for small, Medium, Large Contracting Firms.		
	3.6 Organizational chart of P.W.D Department		
	3.7 Forms of Ownership- Proprietorship, Private Ltd Company Joint Stock Company, Cooperative Societies with their definitions, scope, merits and demerits.		
	3.8 Government, Semi government and public undertaking Organization working in construction and Power sector		
4.	PROJECT MANAGEMENT	22	20
	4.1 Necessity and importance of planning and scheduling		
	4.2 Pretender and Post tender planning of owner and contractor		
	4.3 Preparation of schedule- work break down structure, Types of		

		schedule- construction schedule, material, manpower, financial schedule.		
	4.4	Types of schedule- Construction schedule, material, manpower, financial schedule.		
	4.5	Bar chart method- procedure, merits and limitations of bar chart		
	4.6	Network methods of planning and scheduling- Terms associated, precautions to be taken, Numbering the events by Fulkerson's Rule, development of network. C.P.M- Concept of C.P.M, terminology, time estimate such as EST, EFT, LST, LFT. Critical path, forward pass, backward pass, critical activities, various floats such as total, free, independent, calculation of project duration		
	4.7	P.E.R.T- Beta distribution curve, various time estimates (optimistic, Pessimistic, most likely and expected duration) Simple Problems on CPM and P.E.R.T.		
	4.8	Advantages and limitations of network method, Comparison between C.P.M and P.E.R.T		
	4.9	Project Optimization technique- Time cost Optimization		
5.	HUMAN RESOURCE MANAGEMENT			
	5.1	Personnel management (Introduction, Definition ,Functions and Types of labour)		
	5.2	Staffing (Introduction to H.R planning ,recruitment, Procedure)		
	5.3	Leadership (Types, suitability, advantages , disadvantages qualities of good leader)	10	08
	5.4	Human relations and its effects on efficiency.		
	5.5	Need hierarchy of human needs, its varieties.		
	5.6	Douglas Mc Gregors theory X and theory Y		
	5.7	Kinds of Motivation, Hygiene and Motivational Factors, Herzberg model.		
6.	MATERIAL MANAGEMENT			
	6.1	Inventory management (no numerical) meaning and objectives of Inventory and Inventory control.		
	6.2	Techniques of inventory control, ABC analysis		
	6.3	Economic order quantity (EOQ) Ideal inventory model (reorder point), Graphical representation	10	08
	6.4	Modern Techniques of Material management		
	6.5	Introductory treatment to JIT/SAP/ERP		
7.	COMMUNICATION AT SITE		06	05
	7.1	Concept of communication, Necessity of Communication		
	7.2	Communication Model		
	7.3	Types of communication- Formal, Informal, Oral, Written, Gestural, Communication by Implication.		
	7.4	Channels of communication example of each type		
	7.5	Advanced Communication Devices such as Walkie talkies, Telephone, Ham Radio, Mobile, Fax, Email and Internet		
	7.6	Barrier in the way of effective communication and remedies over it		
8.	LABOUR LAWS		06	05
	8.1	Introduction about Labour law, Necessity of Laws.		
	8.2	Method of wage payment- Time and Date rate system, Piece rate system, combination of these two system		
	8.3	Meaning and important Provision of- Minimum wage Act, Workmen compensation act (Definitions of Dependent, Partial and		

		Total Disablement), Contract Labour Act, ESI Act, Industrial dispute Act, Factory Act.		
9.	QUALITY MANAGEMENT		06	04
	9.1	Definition of Quality, Concept of Quality, Quality Assurance, Introduction to I.S.O., Quality circle.		
	9.2	Brief Introduction to TQM, KAIZEN, 5S and 6 Sigma.		
	Total		80	64

LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

B. (Term work shall consist of following lab work/assignments/visit report. Oral is based on TW)

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	Preparing check list for item wise and quality control of a residential building	04
2.	Any three Bar charts of Small Civil Engineering work such as small residential house, highway project, survey project for water supply in rural areas etc.	04
3.	Any three CPM Network with calculation of project duration	04
4.	Any three P.E.R.T Network with calculation of project duration	04
5.	Any two problems on crashing of network for time cost optimization	02
6.	Ant two problems on resource aggregation with time-scale version of network and resource loading chart	04
7.	Introduction to work study, its scope, method study and time study, procedure of method study, process charts- outline process charts, flow process chart, multiple activity chart, (Atleast one example of each chart on construction work)	04
8.	Organizational chart of technical education in Maharashtra, showing various key persons up to laboratory attendant Organizational chart of Board of technical examination in Maharashtra showing various technical and non- technical posts.	02
9.	Introduction to ISO 9000- importance & its scope	02
10.	Safety measures commonly adopted on construction site of residential building, bridges, dams, underwater works etc.	02
	Total	32

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Continuous assessment of Term Work and Term end oral examination.

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

- Lecture method**
- Improved lecture method.**
- Q & A technique.**
- Demonstration**
- Case study**
- Seminars**
- Field visit**

❖ **SUGGESTED LEARNING RESOURCES :**

- PRINT :** Text books/Reference books/Manuals/Journals.
- NON PRINT :** CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE :

Chapter No.	Title of Chapter	Marks (1.5 x Marks)	Distribution of Marks
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		allotted to chapter)	Knowledge	Comprehension	Application	Total
1.	Introduction	09	06	03	-	09
2.	Fundamentals of management	09	06	03	-	09
3.	Organisation	12	04	04	04	08
4.	Project management	33	12	09	12	33
5.	Human resource management	15	10	05	-	15
6.	Material management	15	05	10	-	15
7.	Communication at site	09	08	06	-	09
8.	Labour laws	09	03	06	-	09
9.	Quality management	09	03	06	-	09
Total		120	47	52	16	120

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Construction management and accounts	Harpal Singh	
2.	Construction planning, Equipment and methods	R. L. Peurifoy	
3.	Handbook of Construction Management	Joy P.K.	
4.	Principles of Construction Management	Roy Pilcher	
5.	Construction Management and accounts	V. N. Vazirani & S.P. Chandola	
8.	Project Management	B . M. Naik	
9.	Construction engineering and Management	S. Seetharaman	
10.	Construction planning and Management	Dr, U. K. Shrivastva	
11.	Construction Management	V. B. Pathak	

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Mr. S. D. Atey	Lecturer in Civil Engineering	G. P. Nagpur
2.	Mr. N. H. Telang	Lecturer in Civil Engineering	G. P. Nagpur
3.	Mr. S. K. Rangari	Lecturer in Civil Engineering	G. P. Nagpur
4.	Mr. S. R. Ukey	Lecturer in Civil Engineering	G. P. Nagpur

(Member Secretary PBOS)

(Chairman PBOS)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/PK/MT/EE/EC/IT/CM****LEVEL NAME : I – GENERAL STUDIES****COURSE CODE : EV 1101****COURSE TITLE : ENVIRONMENTAL SCIENCE****PREREQUISITE : NIL****TEACHING SCHEME: TH :01; TU :01; PR :00; TOTAL CREDITS: 02 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	NIL	50@	NIL	50
MIN.	--	--	--	---	20	---	20

(# - External & Internal Assessment ; @ - Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : NIL****TIME ALLOTTED FOR PROGRESSIVE TEST : NIL****❖ RATIONALE :**

The world today, is facing the biggest challenge of survival. Degradation of ecosystem, depletion of natural resources, increasing levels of pollution, pose major threat to the survival of mankind. The need of the hour, therefore, is to concentrate on the area of environmental science, which shall provide an insight into various environment related issues.

Environmental science is an interdisciplinary academic field that integrates physical and biological sciences, with the study of the environment. It provides an integrated, quantitative, and interdisciplinary approach to the study of environmental systems & gives an insight into solutions of Environmental problems.

❖ OBJECTIVES :**After completing this course, students will be able to**

- Know the concept of Biodiversity
- Understand various renewable energy sources
- Appreciate the need of conservation of natural resources
- Know various sources and effects of pollution
- Develop awareness about impact and consequences of global warming

❖ SKILLS :

1. To present sample case studies of natural disasters
2. To prepare reports on various issues related to environment

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER	MARKS	HOURS
1.	EARTH SYSTEM AND RESOURCES	---	02
	1.1 Geologic time scale; earthquakes, volcanoes, Tsunami, cyclone		

		& landslides		
	1.2	Weather and climate		
	1.3	Global Water Resources and Use Freshwater/saltwater; ocean circulation; agricultural, industrial, and domestic use; surface and groundwater issues; global problems		
2.	CONCEPT OF BIODIVERSITY			
	2.1	Ecosystem diversity. genetic diversity, species diversity,		
	2.2	Economic uses of Biodiversity		
	2.3	Ecological value of biodiversity		
	2.4	Loss of biodiversity & its conservation – reasons for loss of biodiversity conservation of biodiversity (modern methods of biodiversity conservation)	---	02
3.	ENERGY RESOURCES AND CONSUMPTION			
	3.1	Energy Concepts		
	3.2	Energy Consumption history		
	3.3	Present global energy use		
	3.4	Future energy needs		
	3.5	Nuclear fission process; nuclear fuel; electricity production types Environmental advantages/disadvantages of Nuclear Energy	---	04
	3.6	Energy Conservation		
	3.7	Renewable Energy : Solar energy; solar electricity; biomass; wind energy; ocean waves and tidal energy; geothermal; Environmental advantages/disadvantages of above types of energy.		
4.	POLLUTION			
	4.1	Definition of pollution & pollutants , causes of pollution		
	4.2	Air pollution Definition, Types of Air pollutants. Their Sources and Effects. Control of Air Pollution due to gases and particulates.		
	Water Pollution and Wastes			
	4.3	Definition, Causes and Methods of Preventing Water Pollution.	---	03
	4.4	Types of Waste such as Domestic Waste, Industrial Waste, Hazardous wastes, their physical and biological characteristics. Concept and significance of BOD, COD.		
	4.5	Biomedical Waste and E-Waste -- Origin, Effects and control Measures.		
	4.6	Noise pollution - Sources of noise pollution; effects.		
5.	GLOBAL CLIMATE CHANGE			
	5.1	Formation of stratospheric ozone; ultraviolet radiation; causes of ozone depletion; effects of ozone depletion; strategies for reducing ozone depletion	---	02
	5.2	Greenhouse effect; impacts and consequences of global warming		
6.	IMPACTS OF AGROCHEMICALS ON ENVIRONMENT			
	6.1	Fertilizers:- on-farm ecology & ecosystems	---	01
	6.2	Pesticides:- on-farm ecology & ecosystems ,& toxicity to human beings.		
7.	ENVIRONMENT MANAGEMENT		---	02

	7.1	Aspects of Environment Management- Ethical aspects, social aspects, legal aspects, economical aspects & technological aspects, Preventive Environmental Management (PEM) activities.		
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B. ASSIGNMENTS FOR TERMWORK :- Students shall prepare the term work on the basis of above content as follows.

S.No.	Title of Assignments	Hrs.
1.	Preparation of report on Loss of biodiversity & its conservation	03
2.	Preparation of report on case study of Industrial/Nuclear/any other Disaster in India..	03
3.	Preparation of report on air pollution or water pollution in Nagpur city	03
4.	Preparation of report on Global warming or climate change	03
5.	Preparation of report on Impacts of agrochemicals on Environment	04
Total		16

Note: Assignment shall be taken at the end of each relevant topic.

❖ **ASSESSMENT OF TERMWORK:-**

Continuous assessment of Term Work shall be done.

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. Lecture method
2. Improved lecture method.
3. Q & A technique.
4. Case study
5. Seminars
6. Field visit

❖ **SUGGESTED LEARNING RESOURCES :**

1. PRINT : Text books/Reference books/Manuals/Journals.
2. NON PRINT : CDs / PPT / Transperencies / Charts / Web sites

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Towards Sustainable Development	M.S.Board of Secondary & Higher Secondary Board Pune.	
2	Our Environment	M.S.Board of Secondary & Higher Secondary Board Pune	
3.	Environmental Engg TTTI(Madras)	Tata Mc Graw-Hill, New Delhi	
4.	Fundamentals of Water Supply & Sanitary Engg.	S.C.Rangwala	
5.	Environmental Engg	A Kamla & D.L.Kanth Rao Tata Mc Graw-Hill, New Delhi	0-07-451708-2

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Prof. R.N.Giradkar	HOD(Civil Engg.)	Govt. polytechnic Nagpur
2.	Dr. (Mrs)R.A.Wankhade	Lecturer in Civil Engg.	Govt. polytechnic Nagpur
3.	Prof V.B.Dhait	Lecturer in Civil Engg.	Govt. polytechnic Nagpur

(Member Secretary PBOS)

(Chairman PBOS)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM****LEVEL NAME : GENERAL STUDIES (CREDIT NON EXAM COURSES)****COURSE CODE : NE1101****COURSE TITLE : PHYSICAL FITNESS TRAINING****PREREQUISITE : NIL****TEACHING SCHEME: TH :00; TU :00; PR :02; TOTAL CREDITS:02 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	--	--	--	--
MIN.	--	--	--	--	--	--	--

(@ - Internal Assessment ; # - External & Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : NIL.****TIME ALLOTTED FOR PROGRESSIVE TEST : NIL.****❖ RATIONALE :**

Physical fitness is one of the most important things in life and one of the most valuable assets one can ever have. Health is one of the pre-requisites for a happy, well-balanced life. There are several advantages of being physically fit; physical fitness helps in the long run to the diploma engineering students.

❖ OBJECTIVES :**After completing this course students will able –**

- 1.To know the importance of health.
- 2.To achieve flexibility in body.
- 3.To boost self-confidence.
- 4.To make muscles stronger and increase overall strength.
- 5.To keeps beautiful and glowing.
- 6.To develops the strength to ward off diseases and infections.

❖ SKILLS :**Students will be able–**

1. To improve health related physical fitness.
2. To improve muscle strength.
3. To improve cardio vascular endurance.
4. To improve muscle endurance.
5. To improve body flexibility.
6. To improve neuro-muscular co-ordination.

NOT APPLICABLE

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Practical Measurements for Evaluation in Physical Education	Barry L. Johnson, Jack K. Nelson, Surjeet Publications, Delhi, 1988	-
2.	Sharirik Shikshan Hastpustika	Maharashtra Rajya Pathyapustak Nirmitti va Abhyaskram Sanshodhan Mandal ,Pune	-
3.	Test and Measurement in physical Education	Dr. Abhay Kumar Shrivastava, Amit brothers Publications, 1998	-
4.	Test and Measurement in physical Education	Dr. Wangwad, Tiwari Diamond Publications, Pune,2006	ISBN: 81-89724-51-7

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	C.M.Game	Physical Training Instructor	Rashtraseva Vidhyalaya, Nagpur
2.	U.D.Mendulkar	Lecturer	Shri. N. Tirpude college of Physical Education, Nagpur
3.	A.C. Shahare	Lecturer	Shri. N. Tirpude college of Physical Education, Nagpur
4.	G.V.Gotmare	Lecturer In Electrical Engineering, Sports Incharge	Govt. Polytechnic, Nagpur

(Member Secretary PBOS)

(Incharge- CNE)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM****LEVEL NAME : GENERAL STUDIES (CREDIT NON EXAM COURSES)****COURSE CODE : NE1102****COURSE TITLE : YOGA****PREREQUISITE : NIL****TEACHING SCHEME: TH :00; TU :00; PR :02; TOTAL CREDITS:02 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	--	--	--	--
MIN.	--	--	--	--	--	--	--

(@ - Internal Assessment ; # - External & Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : NIL.****TIME ALLOTTED FOR PROGRESSIVE TEST : NIL.****❖ RATIONALE :**

It is felt that student should know the importance of “YOGA” so that they can keep themselves physically fit. This course is included in Allied Course for this purpose.

❖ OBJECTIVES :**After completing this course students will able –**

1. Improve physical fitness.
2. Develop good posture.
3. Develop their personality.
Brilliant in his/her study.

❖ SKILLS :**Students will be able–**

1. To improve health related physical fitness.
2. To improve cardio vascular endurance.
3. To improve body flexibility.
- 4 To improve neuro-muscular co-ordination.

CONTENTS :**A. THEORY :**

Sr. NO.	CHAPTER	MARKS	HOURS
1.	1.1 Meaning of YOGA.	---	---
	1.2 Concept of yoga and its relation with physical fitness.	---	---
	1.3 Astanga YOGA with special reference to a) Yama	---	---

	b) Niyam c) Asan d) Pranayam e) Pratyahar, Dharna, Dhyana & Samadhi		
	1.4 Anatomy of body	---	---
	1.5 The therapeutic and corrective values of yogic practices	---	---
	1.6 Purification of mind, Practices of "Dhyana" to concentrate of mind (Meditation).	---	---

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	Standing Asanas:- a) Tadasan b) Tree-Asana c) Hast – Padasan d) Kati- Chakrasan e) Sharir – Sanchalan f) Surya Namaskar with Bij mantra.	08
2.	Seating Asanas: a) Sandichalan of feet, hands, head, neck joints, eyes etc. b) Paschimotanasan c) Padmasan d) Gomukhasan e) Vakrasan	06
3.	Pranayam: a) Anulom – Vilom Pranayam b) Bhastrika Pranayam c) Kapalabhati Pranayam d) Dhyana – Concentration on breathing e) Omkar – 5 times and Prayer.	06
4.	Special Asanas for student who are interested on dhar: a) Shirshasan b) Sarvangasan c) Halasan d) Matsyasan e) Chakrasan f) Bhujangasan g) Shalabhasan h) Naukasan i) Dhanurasan j) Vaajrasan k) Yog mudra l) Siddhasan etc.	12
Total		32

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Final grade shall be awarded on the basis of attendance, regularity in submission of work and final oral based on practical works as A, B, C.

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. **Q & A technique.**
2. **Demonstration**

❖ **SUGGESTED LEARNING RESOURCES :**

1. **PRINT :** Text books/Reference books/Yoga Magazines.
2. **NON PRINT :** CDs / Charts

C. **SPECIFICATION TABLE : (NOT APPLICABLE)**

SPECIFICATION TABLE : (NOT APPLICABLE)						
Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NOT APPLICABLE						

D. **REFERENCE & TEXT BOOKS:**

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Sanghik Asanas -I	Janardhan Swamy Yogabhyasi Mandal, Ramnagar, Nagpur	-
2.	Sanghik Asanas -II	Janardhan Swamy Yogabhyasi Mandal, Ramnagar, Nagpur	-
3.	Pranayam	Janardhan Swamy Yogabhyasi Mandal, Ramnagar, Nagpur	-

E. **LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:**

S.N.	Name	Designation	Institute / Industry
1.	Haribhau Meshram	Yoga Teachear	Janardhan Swamy Yogabhyasi Mandal, Ramnagar, Nagpur
2.	Smt. Payal Advani	Yoga Teachear	Janardhan Swamy Yogabhyasi Mandal, Ramnagar, Nagpur
3.	Ku. Shruti Sawaithool	Yoga Teachear	Janardhan Swamy Yogabhyasi Mandal, Ramnagar, Nagpur

(Member Secretary PBOS)

(Incharge- CNE)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME:** DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM**LEVEL NAME:** GENERAL STUDIES (CREDIT NON EXAM COURSES)**COURSE CODE:** NE1103**COURSE TITLE :** SPORTS**PREREQUISITE:** NIL**TEACHING SCHEME:** TH :00; TU :00; PR :02; TOTAL CREDITS:02 (Hrs/Week)

(1 CREDIT = 1 CLOCK HR.)

EVALUATION SCHEME:

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	--	--	--	--
MIN.	--	--	--	--	--	--	--

(@ - Internal Assessment ; # - External & Internal Assessment only)

TIME ALLOTTED FOR TERM EXAM : NIL.**TIME ALLOTTED FOR PROGRESSIVE TEST :** NIL.❖ **RATIONALE :**

Introducing student to sports is very important. A sport is essential not only for the physical fitness and growth of a student, but also for his mental growth. The importance of sports in education can be gauged by the way it helps in inculcating values such as dedication, discipline and responsibility in students, at the same time teaching them many relevant life lessons. Playing sports such as volley ball, foot ball, kho-kho, kabaddi, athletics has their own set of advantages.

❖ **OBJECTIVES :****After completing this course students will able –**

- 7.To know the importance of sports.
- 8.To keep physically fit.
- 9.To understand the importance of team spirit.
10. To make wise and take quick decisions in other areas of life.
11. To develop self confidence in a person.

❖ **SKILLS :****Students will be able–**

1. To improve health related physical fitness.
2. To improve muscle strength, endurance, and body flexibility.
3. To improve sports related skills.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER	MARKS	HOURS
	NIL	NIL	NIL

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

Student should select any one of the sport from the following:-

1. Athletics ; 2. Kabaddi ; 3.Kho-Kho; 4.Volley ball; 5.Foot ball

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	To measure the BMI (body mass index) of the admitted student. v) Height measurement. vi) Weight measurement.	1
2.	To measure the WHR (Waist Heap Ratio) of the admitted student. vii) Waist measurement. viii) Heap measurement.	1
3.	To deliver the normal history, rules & regulation, ground measurement related to the sport.	2
4.	To do routine exercise for improving the muscle strength, endurance, speed, flexibility, agility.(15 minuets for every period of 2Hrs.) ix) Hand stand dips. x) Pushup with the help of partner. xi) Half squat with the help of partner. xii) Partner pull-ups. xiii) Flexed arm hang. xiv) Hopping (Langadi). xv) Seat ups xvi) Jumping xvii) Twelve circuit training xviii) Surya namaskar xix) Shoulder rotation. xx) Arm rotation. xxi) Wrist rotation. xxii) Neck rotation. xxiii) Heap rotation xxiv) Jumping jacks with hands and legs. xxv) Shoulder rotation in alternate direction. xxvi) Zigzag run.	4
5.	For Athletics:- To develop the required skills in following events. 1. Running- short distance, middle distance, long distance. 2. Jumping- Long jump, high jump, half step jump. 3. Throwing- Shot put, Discus throw, Javelin throw. Test for measuring the performance.	2 2
6.	For Kabaddi:- To develop the required skills. 1. Reders skill – Hand touch, Back kick, side kick, round kick, Squat leg thrust. 2. Anti-reders skill- Knee hold, Thai hold, wrist hold, ankle hold, Chain hold. Group intramural.	2 2
7.	For Kho-Kho:- To develop the required skills. 1. Runner skill – Single chain, double chain, three in one, eight circle. 2. Chaser skill- Simple kho, back kho, late kho, double kho, pole dive, air dive. Group intramural.	2 2
8.	For Volley Ball:- To develop the required skills. 1. Service skill- Under hand service, tennis service, round arm service, floating service, smash, single block, double block, high pass, diving, lifting, fore arm pass, short pass, over head pass, push pass.	2 2
9.	For Foot Ball:- To develop the required skills. 1. Skill- Instep kick, Inside kick, Thai control, side kick, pass, Volley shot, throw in, heading, cross pass, Goal, penalty shoot.	2 2
10.	To measure the BMI (body mass index) of the outgoing student.	2

	iii) Height measurement. iv) Weight measurement.	
	To measure the WHR (Waist Heap Ratio) of the admitted student. iii) Waist measurement. iv) Heap measurement.	2
Total		32

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Continuous assessment of tests shown in curriculum. Gradation of student is based on physical improvement of the student at the time of completion of training.

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. **Q & A technique.**
2. **Demonstration**
3. **Sports materials (Sport shoes , lower and t-shirt for every students)**

❖ **SUGGESTED LEARNING RESOURCES :**

1. **PRINT :** Text books/Reference books/Manuals.
2. **NON PRINT :** CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE :

Chapter No.	Title of Chapter	Marks	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NOT APPLICABLE						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Sharirik Shikshan Hastpustika	Maharashtra Rajya Pathyapustak Nirmitti va Abhyaskram Sanshodhan Mandal ,Pune	-
2.	Arogya va Sharirik Shikshan-Teacher Hand book	Maharashtra Rajya Pathyapustak Nirmitti va Abhyaskram Sanshodhan Mandal ,Pune	-

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	C.M.Game	Physical Training Instructor	Rashtraseva Vidhyalaya, Nagpur
2.	U.D.Mendulkar	Lecturer	Shri. N. Tirpude college of Phy. Education, Nagpur
3.	A.C. Shahare	Lecturer	Shri. N. Tirpude college of Physical Education, Nag.
4.	G.V.Gotmare	Lecturer In Electrical Engineering, Sports Incharge	Govt. Polytechnic, Nagpur

(Member Secretary PBOS)

(Chairman PBOS)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM

PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM
LEVEL NAME : I- GENERAL STUDIES (CREDIT NON EXAM COURSES)
COURSE CODE : NE1104
COURSE TITLE : PUBLIC SPEAKING
PREREQUISITE : NIL
TEACHING SCHEME: TH :00; TU :00; PR :02; TOTAL CREDITS:02 (Hrs/Week)
 (1 CREDIT = 1 CLOCK HR.)

EVALUATION SCHEME:

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	--	--	--	--
MIN.	--	--	--	--	--	--	--

(@ - Internal Assessment ; # - External & Internal Assessment only)

TIME ALLOTTED FOR TERM EXAM : NIL.**TIME ALLOTTED FOR PROGRESSIVE TEST** : NIL.❖ **RATIONALE :**

Public speaking is an 'Art' and for a good leadership qualities it is must. Therefore, This course has been kept as allied courses for diploma programme.

❖ **OBJECTIVES :****After completing this course students will able –**

- Formulate “specific purpose statements”
- Analyses and adopt to audience.
- Organize ideas and constructing out line.
- Use language effectively and so forth.
- Formulate all above, based on creative thinking and take decision thereon.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		HOURS
1.	Speaking and Listening		---
	1.1	Speaking in Public	
	1.2	Listening, specify the skill of listening	
	1.3	Creative thinking and decision making	
2.	Speech preparation:		---
	2.1	Selecting a topic, purpose	
	2.2	Analysis of the audience	
	2.3	Supporting your ideas	
3.	Speech preparation-Drafting the out line		---
	3.1	Structuring the body of the speech	
	3.2	Beginning and ending the speech	
	3.3	Outlining the speech	

4.	Presenting the speech		---
	4.1	Using language	
	4.2	Delivery	
	4.3	Body language DO and DON'TS	
	4.4	Using Visual Aids	
5.	Varieties of Public Speaking		---
	5.1	Speaking to inform	
	5.2	Speaking to persuade	
	5.3	Speaking to special occasions	
	5.4	Speaking in small groups	
	5.5	Address through media	
Total			---

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	Group discussion on characteristics of an effective public speaking and ineffective public speaking.	4
2.	Write a report on evaluation of your major strength and weakness as a speaker and a listener.	2
3.	Using the methods of brain storming in a group of 8 to 15 students by selecting three topics for classroom speech	4
4.	To ask student to introduce their friend in best possible way.	2
5.	Preparation and presentation of "NEWS"	2
6.	To plan to conduct interview for classroom speeches and hold the interviews afterwards.	4
7.	Attend a speech arrange in a campus. Prepare a brief report on speakers introduction, conclusion, and non verbal communication.	4
8.	Analyze the given speech fully and record.	2
9.	Deliver a speech prepared by you. Here the speech prepared by you(after recording and replay and improve)	4
10.	Extempore.	4
Total		32

❖ ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :

Performance shall be graded as A,B,C on the basis of

1. Attendance in theory.
2. Active participation in practical session and term work on continuous assessment

❖ SUGGESTED IMPLEMENTATION STRATEGIES :

1. Lecture method
2. Improved lecture method.
3. Q & A technique.
4. Demonstration

❖ SUGGESTED LEARNING RESOURCES :

1. **PRINT** : Text books/Reference books/Manuals/Journals.
2. **NON PRINT** : CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : NOT APPLICABLE

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NIL						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	The art of public speaking	Stephen E. Lucas.	--
2.	Public speaking and influencing Men Business	Dale Carnegie(Taraporwala Sons &Co)	--
3.	Reference of Audio Visual Aids.		--

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Prof V.M.Mesharam	Professor & Incharge CNE	G.P Nagpur
2.	Mrs Shashi R Pillai	Visiting Lecturer in English	G.P Nagpur
3.	Mr Y Rayalu	Lecturer	Dharampeth college of science Nagpur.
4.	Mrs Vinita Motghare	Lecturer & Councilor	Professional Member

(Member Secretary PBOS)

(Incharge CNE)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM****LEVEL NAME : I- GENERAL STUDIES (CREDIT NON EXAM COURSES)****COURSE CODE : NE1105****COURSE TITLE : PERSONALITY DEVELOPMENT****PREREQUISITE : NIL****TEACHING SCHEME: TH :00; TU :00; PR :02; TOTAL CREDITS:02 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	--	--	--	--
MIN.	--	--	--	--	--	--	--

(@ - Internal Assessment ; # - External & Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : NIL.****TIME ALLOTTED FOR PROGRESSIVE TEST : NIL.****❖ RATIONALE :**

The personality has been regarded as a practical force to determine success or failure in life and this can be changed two times during the life span one is when child is transferred into that of adult and secondly. In the old age. Therefore, this course has been kept in the Allied Course, as Credit non Examination course, for developing a good personality.

❖ OBJECTIVES :**After completing this course students will be able –**

- To improve general appearance.
- To have impressive behavior
- To have good facial expression etc.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		HOURS
1.	The Meaning Of Personality		---
	1.1	What is personality ?	
	1.2	The symbol of self	
	1.3	Importance of self confidence.	
	1.4	Role of optimism.	
	1.5	Persistence and changes.	
	1.6	Importance of changes	
2.	Personality Determinants		---
	2.1	Physical determinants	
	2.2	Intellectual determinants	
	2.3	Emotional determinants	
	2.4	Social determinants	

	2.5	Aspiration and achievements.	
	2.6	Educational determinants	
	2.7	Family determinants	
3.	Individual Behaviour		---
	3.1	Factor effecting individual behavior.	
	3.2	Importance of values and ethics in life	
	3.3	Healthy Personalities	
	3.4	Professional behavior- manner & attiqates	
Total			---

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	SWOT Analysis	4
2.	self assessment through Johari Windows	4
3.	Meditation(exercise)]	4
4.	Environmental Awareness (group discussion)	4
5.	Assertiveness Training	4
6.	Identifying intellectuals determinants and analyzing it .	4
7.	Role by creating situation (Group discussions)	4
8.	Presentation of individual's aspiration and achievements	4
Total		32

❖ ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :

Evaluation of the students will be based on the continuous assessment by grading as A, B, C. based on

1. Attedance
2. Participation in practical
3. Term Work.

❖ SUGGESTED IMPLEMENTATION STRATEGIES :

1. Lecture method
2. Improved lecture method.
3. Q & A technique.
4. Demonstration

❖ SUGGESTED LEARNING RESOURCES :

1. **PRINT** : Text books/Reference books/Manuals/Journals.
2. **NON PRINT** : CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : NOT APPLICABLE

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NIL						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Personality development	Elizabeth B Hurlock Tata Mc-Graw Hill.P	--
2.	Personality Development	Y. Ralyalu	--

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Prof V.M.Mesharam	Professor & Incharge CNE	G.P Nagpur
2.	Mrs Shashi R Pillai	Visiting Lecturer in English	G.P Nagpur
3.	Mr Y Rayalu	Lecturer	Dharampeth college of science Nagpur.
4.	Mrs Vinita Motghare	Lecturer & Councilor	Professional Member

(Member Secretary PBOS)

(Incharge- CNE)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM****LEVEL NAME : I – GENERAL STUDIES (CREDIT NON EXAM COURSES)****COURSE CODE : NE 1106****COURSE TITLE : HOBBY ELECTRONICS****PREREQUISITE : NIL****TEACHING SCHEME: TH :00; TU :00; PR :02; TOTAL CREDITS: 02 (Hrs/Week)****(1 CREDIT = 1 CLOCK HR.)****EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	---	---	---	---	---	---	---
MIN.	---	---	---	---	---	---	---

(# - External & Internal Assessment ; @ - Internal Assessment only)**TIME ALLOTTED FOR TERM EXAM : NIL****TIME ALLOTTED FOR PROGRESSIVE TEST : NIL****❖ RATIONALE :**

It is felt that Diploma holder those who have interest in” hobby electronics circuits” must have minimum competency and knowledge of it, so later on some student may also take up it as an aim of life of setting up a business of this. Therefore, this course has been kept as one of general studies course in the curriculum.

❖ SKILLS :**After completing this course students will –**

- Identify different electronics components
- Handle electronics circuit development tools
- Test the electronics components and circuits
- Develop the simple electronics hobby project

CONTENTS :**A. THEORY : (NIL)**

SR. NO.	CHAPTER	MARKS	HOURS
NIL			

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	Understanding different electronics components	02
2.	Identification of different electronic components	02
3.	Symbols of different components	02
4.	Study & handling of electronics circuit development tools	02
5.	Testing of different electronics components	04
6.	Selection of simple electronics Hobby circuits	04
7.	Collection of Component and PCB (general purpose) and their testing	04
8.	Component layout of selected electronics circuit	04
9.	Mounting of components on PCB (general purpose) ,Soldering of electronics	04

	components.	
10.	Testing, fault finding, rectification of fault. of circuit.	02
11.	Final testing of circuit & packaging	02
Total		32

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Continuous assessment of Term Work.

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. Lecture method
2. Improved lecture method.
3. Q & A technique.
4. Demonstration
5. Case study

❖ **SUGGESTED LEARNING RESOURCES :**

1. **PRINT :** Text books/Reference books/Manuals/Journals.
2. **NON PRINT :** CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : (NOT APPLICABLE)

Chapter No.	Title of Chapter	Marks	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NOT APPLICABLE						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Electronic For You (journal)		
2.	Electronics Material And Components	Madhuri Joshi	
3.	Electronics materials and components	B.G Joshi	
4.	Data Books Of electronic components & devices		
5.	Websites www.electronicprojects.com		

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	A. A. Ali	Lecturer	Govt. Polytechnic, Nagpur
2.	D.A.Brahmankar	Lecturer	Govt. Polytechnic, Nagpur

(Member Secretary PBOS)

(Incharge-CNE)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM

PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM
LEVEL NAME : I – GENERAL STUDIES (CREDIT NON EXAM COURSES)
COURSE CODE : NE 1107
COURSE TITLE : DIGITAL PHOTOGRAPHY
PREREQUISITE : NIL

TEACHING SCHEME: TH :00; TU :00; PR :02; **TOTAL CREDITS: 02 (Hrs/Week)**
 (1 CREDIT = 1 CLOCK HR.)

EVALUATION SCHEME:

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	---	---	---	---	---	---	---
MIN.	---	---	---	---	---	---	---

(# - External & Internal Assessment ; @ - Internal Assessment only)

TIME ALLOTTED FOR TERM EXAM : NIL

TIME ALLOTTED FOR PROGRESSIVE TEST : NIL

❖ **RATIONALE :**

It is felt that Diploma holder those who have interest in Photography must have minimum competency and knowledge of it, so later on some student may also take up it as an aim of life of setting up a business of this. Therefore, this course has been kept as one of Allied Courses in their curriculum.

❖ **OBJECTIVES :**

The student will be able to

1. Handle still camera exposure
2. Perform developing and printing process of still photography.

❖ **SKILLS :**

1. Identify parts of camera and understand function.
2. Understand digital photography techniques & related softwares.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		MARKS	HOURS
1.	History of Photography		---	---
	1.1	What is Photography?		
	1.2	Dagurretype Process		
	1.3	* Colotype Process		
2.	Light for Photography		---	---
	2.1	Natural light		
	2.2	Artificial light		
3.	Composition		---	---
4.	Types of Photography		---	---

	4.1	Conventional Photography		
	4.2	Digital Photography		
5.	Equipments for Digital Photography			
	5.1	Digital Camera		
	5.2	Types of Digital Camera		
	5.3	Basic Camera, Mid – Level Digital Camera, Single Lens Reflex Digital Camera	---	---
	5.4	Accessories for Digital Camera		
	5.5	Types of Lenses, Tripod, Filters etc		
6.	Software s for Digital Photography			
	6.1	What is software, hardware and Liveware, System Software, Application Software		
	6.2	Photoshop – 7		
	6.3	Photoshop – cs	---	---
	6.4	Image editing		
	6.5	Storing the Image, Brightness and Contrast, Colour Balance, Orientation, Layers, Image Levels, Saturation Cropping, Image Size, RBG, CMYK		
	6.6	Printing the Image		
Total			NIL	NIL

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	Study & demonstration of Camera single lense reflex, Twin lense reflex. Stand,Camera accessories.	08
2.	Lighting and lighting equipment	06
3.	Assignments on - Developer-B/W.Roll Developing Tank.	08
4.	Use of software in image editing & printing.	10
Total		32

a. ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :

Final grade shall be awarded on the basis of attendance, regularity in submission of work and final oral based on Term work.

b. SUGGESTED IMPLEMENTATION STRATEGIES :

- 1. Lecture method**
- 2. Q & A technique.**
- 3. Demonstration**
- 4. Case study**

c. SUGGESTED LEARNING RESOURCES :

- 1. PRINT :** Text books/Reference books/Manuals/Journals.
- 2. NON PRINT :** CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : (NOT APPLICABLE)

Chapter No.	Title of Chapter	Marks	Distribution of Marks
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			Knowledge	Comprehension	Application	Total
NOT APPLICABLE						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Photography Question And Answers	Cassel Camera Wise Guide Problem Solver Cansellvilliers House 41/47 Strands London.	
2.	Basic Guide Creative Dark Room Technique	H. P. Book P. 05367, TUCSON A 285703 6021888 2150 U.S. A.	
3.	How To Take Better Photography	INC P.O.Box 5367 TUCSON AZ 85703 6021888-2150 U.S.A.	

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Ms.D.S.Nemanwar	Lecturer, IT	Govt.Poly.Nagpur
2.	Shri.Tupekar	Professional photographer	Visiting faculty, Tuli Institute, Nagpur.

(Member Secretary PBOS)

(Incharge- CNE)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM

PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM
LEVEL NAME : I – GENERAL STUDIES (CREDIT NON EXAM COURSES)
COURSE CODE : NE 1108
COURSE TITLE : REPAIRING AND MAINTENANCE OF REFRIGERATION AND AIR CONDITIONING EQUIPMENT.
PREREQUISITE : NIL

TEACHING SCHEME: TH :00; TU :00; PR :02; **TOTAL CREDITS: 02 (Hrs/Week)**

(1 CREDIT = 1 CLOCK HR.)

EVALUATION SCHEME:

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	-	-	-	-	-	-	-
MIN.	-	-	-	-	-	-	-

❖ **RATIONALE :**

The knowledge of repair and maintenance of domestic refrigerator and air conditioner is helpful in daily life. One should acquire skills in carrying out their repairs and maintenance.

❖ **OBJECTIVES :** After studying this course students will able to

- Basic principle of refrigeration and air conditioning.
- Constructional details of refrigeration and air conditioner.
- Testing methods.
- Handling of tools
- Maintenance procedure and safety precaution

❖ **SKILLS** : Students will be able to

- Identify and use different hand tools
- Test, repair and maintain refrigerator and air conditioner.
- Dismantle the compressor
- Find and rectify faults in electrical circuits.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		MARKS	HOURS
1.	REFRIGERATION		---	---
	1.1	Definition of refrigeration		
	1.2	Necessity types of refrigeration, principle of refrigeration		
	1.3	Working of vapour compression refrigeration system		
	1.4	Parts of domestic refrigerator such as compressor, condenser, capillary tube, drier, filter, evaporator relay, accumulator and electrical circuit		
	1.5	Dismantling of compressor, water cooling testing, maintenance of hand tools, safety precaution		

2.	AIR CONDITIONING		---	---
	2.1	Introduction necessity and uses		
	2.2	Types of air conditioner		
	2.3	Window air conditioner its parts, control valves, refrigerant cylinder, electrical circuit.		
	2.4	Testing of window air conditioner		
	2.5	Maintenance		
Total			---	---

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab. Work/Assignments	Hrs.
1.	Introduction to refrigerator	02
2.	Demonstration to hand tools and its uses	04
3.	Demonstration of domestic refrigerator and its component	02
4.	Dismantling of compressor	04
5.	Testing of water cooler	02
6.	Electric circuit diagram of refrigerator	02
7.	Fault finding and maintenance of refrigerator	04
8.	Introduction to window air conditioning system	02
9.	Demonstration of split and window conditioning system	02
10.	Testing of window air conditioner	02
11.	Electric circuit diagram of window air conditioning system	02
12.	Fault finding and maintenance air conditioner	04
Total		32

a. ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :

Continuous assessment of Term Work.

b. SUGGESTED IMPLEMENTATION STRATEGIES :

1. Lecture method
2. Improved lecture method.
3. Q & A technique.
4. Demonstration
5. Case study

c. SUGGESTED LEARNING RESOURCES :

1. **PRINT** : Text books/Reference books/Manuals/Journals.
2. **NON PRINT** : CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : (NOT APPLICABLE)

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NOT APPLICABLE						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
------	-------	---	-------------

1.	Regrigeration and air conditioning servicing	S.Kumar new Heights publication New Delhi	
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E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Mr. Anil M. Onkar :	M.D.	Onkar Furnitech MIDC Nagpur, Indutralist
2.	Mr.D.S.Dhakate	Superintending engineer	MSEB,CTPS Chandrapur.
3.	Prof. O.V. Sarode	I/C HMED,	GP Nagpur.
4.	Prof. M.P. Daniel	I/C HMED 2 nd Shift,	GP Nagpur.
5.	Prof. M.G. Thote	LME	GP Nagpur.
6	Prof S.V.Joshi	LME	GP Nagpur

(Member Secretary PBOS)

(Incharge- CNE)

GOVERNMENT POLYTECHNIC, NAGPUR.

(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM

PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM
LEVEL NAME : I – GENERAL STUDIES (CREDIT NON EXAM COURSES)
COURSE CODE : NE1109
COURSE TITLE : TWO WHEELER MAINTENANCE
PREREQUISITE : NIL

TEACHING SCHEME: TH :00; TU :00; PR :02; **TOTAL CREDITS: 02 (Hrs/Week)**
 (1 CREDIT = 1 CLOCK HR.)

EVALUATION SCHEME:

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	---	---	---	NIL	---	NIL	----
MIN.	---	---	---	---	---	---	----

(# - External & Internal Assessment ; @ - Internal Assessment only)

TIME ALLOTTED FOR TERM EXAM : NIL

TIME ALLOTTED FOR PROGRESSIVE TEST : NIL

❖ **RATIONALE :**

Two Wheeler is a common need of daily life. Therefore, it is felt that one must have knowledge about the various systems and their functional importance and working in the context of two-wheeler and its maintenance. Hence, this course has been offered for student of various diploma programme as one of the Allied Courses as “Credit Non-Exam Course”

❖ **OBJECTIVES :**

A student will able to

- List the various system of two-wheeler
- Describe the functional importance and working of various systems.
- Locate common faults in various systems and repair them
- Develop awareness about Motor Vehicle Rules, Road Signals safety, precautions etc.

❖ **SKILLS :**

1. Identify components of two wheeler.
2. Identify tools required for maintenance of two wheeler.
3. Common faults occur in two wheeler.
4. Know MV rules & regulations.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		MARKS	HOURS
1.	CLASSIFICATION OF TWO-WHEELER		---	--
2.	VARIOUS SYSTEM EXISTS IN TWO-WHEELER IN GENERAL		---	---
	2.1	Engine ; Fuel ; Magneto; ignition system ; Lubrication		
	2.2	Transmission ; Chain Sprocket; Variomatic; Belt Pulley; Geared; Centrifugal clutch		

	2.3	Wheel and Type		
	2.4	Brake-Linkages		
	2.5	Electrical Head light, Self starters		
	2.6	Suspension		
3.	COMMON FAULTS OCCUR IN VARIOUS SYSTEMS OF DRIVING RELATED		---	---
4.	MV RULE, DRIVING LICENCE, ROAD SIGNALS, VEHICLE REGISTRATION		---	---
Total			---	---

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	Study of fuel system of a two-wheeler and dismantling and assembly of simple carburetor.	04
2.	Study of brake system linkages and setting of brakes of two wheeler.	04
3.	Study of ignition system of a two-wheeler and setting spark plug gap and contact and setting spark plug gap and contract breaker point.	04
4.	Study of lighting system of two-wheeler.	04
5.	Study of self-starting mechanism of a self-starting moped.	04
6.	Study of starting mechanism of peddles starting moped.	04
7.	Study engine lubrication of motorcycle settling of lubricating oil supply.	04
8.	Removing, cleaning and fitting of fuel, oil and air filers in a two-wheeler.	04
Total		32

❖ **ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :**

Final grade shall be awarded on the basis of attendance, regularity in submission of Term Work and final Oral on Term Work .

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. Lecture method
2. Q & A technique.
3. Demonstration
4. Case study
5. Seminars
6. Field visit

❖ **SUGGESTED LEARNING RESOURCES :**

1. **PRINT :** Text books/Reference books/Manuals/Journals.
2. **NON PRINT :** CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : (NOT APPLICABLE)

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NOT APPLICABLE						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
------	-------	---	-------------

1.	Automobile Engineering by	Kirpal Singh	
2.	Auto Engineering by	R. B. Gupta	
3.	Auto Engineering Vol. I to IV	William and Course	

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	Ganesh Dalvi	HOD Automobile Engg	Govt.Poly. Nagpur
2.	Samir Telang	Lecturer in Automobile Engg	Govt.Poly. Nagpur
3.	Kishor Dixit	Lecturer in Automobile Engg	Govt.Poly. Nagpur

(Member Secretary PBOS)

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(An Autonomous Institute of Govt. of Maharashtra)

COURSE CURRICULUM**PROGRAMME : DIPLOMA IN CE/ME/AU/PK/MT/EE/EC/IT/CM****LEVEL NAME : I- GENERAL STUDIES (CREDIT NON EXAM COURSES)****COURSE CODE : NE1110****COURSE TITLE : REPAIRING AND MAINTENANCE OF DOMESTIC APPLIANCES****PREREQUISITE : NIL****TEACHING SCHEME: TH :00; TU :00; PR :02; TOTAL CREDITS:02 (Hrs/Week)**
(1 CREDIT = 1 CLOCK HR.)**EVALUATION SCHEME:**

MARKS	THEORY			TUTORIAL/PRACTICAL			TOTAL
	TERM EXAM	PROG TEST	TOTAL	PRACT EXAM	TERM WORK	ORAL EXAM	
MAX.	--	--	--	--	--	--	--
MIN.	--	--	--	--	--	--	--

(@ - Internal Assessment ; # - External & Internal Assessment only)

TIME ALLOTTED FOR TERM EXAM : NIL.**TIME ALLOTTED FOR PROGRESSIVE TEST : NIL.****❖ RATIONALE :**

The knowledge of repairs of domestic appliances is helpful in daily life of mankind. One should have ability to acquire skills in carrying out repairs of certain household appliances with accuracy and maintain them for daily needs.

❖ OBJECTIVES :**After completing this course students will able –**

1. To know basic principles of domestic and office appliances.
2. To know constructional details of appliances.
3. To know testing methods.
4. To know faultfinding and repairs.
5. To know about repairing tools and safety precautions.

❖ SKILLS :**Students will be able–**

1. To identify and use different electrical repairing tools.
2. To test, Repair and maintain the domestic appliances.
3. To test the single-phase electric supply and replace the fuse.
4. To test the earth continuity.

CONTENTS :**A. THEORY :**

SR. NO.	CHAPTER		MARKS	HOURS
1.	ELECTRICL SAFETY		---	---
	1.1	What is safety? What is an Accident? Causes of accidents.		
	1.2	Electrical safety rules, Safety signs and symbols.		

	1.3	Electric shock, effect of electric shock, Method of removing electrocuted person.		
	1.4	Artificial respiration- Schaefer's method, Silvester's method, Mouth to mouth respiration.		
	1.5	Fuses- Types		
	1.6	Necessity of Earthing		
2.	REPARING TOOLS			
	2.1	Identification of various electrical tools		
	2.2	Use of screwdriver, various pliers (Combination, long nose etc.), hammers, spanners, test lamp, tester etc.	---	---
3.	DOMESTIC APPLIANCES			
	3.1	Study of following domestic / office appliances based on principles of operation, construction, dismantling and assembling, trouble shooting, common fault finding, testing, repairs and maintenance. 1. Ordinary / Automatic / steam iron. 2. Water heater / geysers. 3. Cooking ranges (Hot plate / segari) 4. Electric oven / Toaster 5. Fans (Table, ceiling, Exhaust). 6. Air cooler 7. Fluorescent Tube light / mercury vapour lamp / sodium vapour lamp. 8. Vacuum cleaner / blower. 9. Grinder / mixer / juicer / food processor. 10. Portable drill machine. 11. Battery eliminator. 12. Emergency lamp. 13. Electric Bell. 14. Voltage stabilizer. 15. Refrigerator / Air conditioner (Maintenance only) 16. Washing Machine. Note: - Minimum six appliances to be studied/ covered.	---	---
	Total		---	---

B. LIST OF PRACTICALS/LABORATORY EXPERIENCES/ASSIGNMENTS:

S.No.	Title of Practical/Lab.Work/Assignments	Hrs.
1.	To identify different electrical maintenance tools.	4
2.	To test single-phase and three-phase electric supply using test lamp and to use tester.	4
3.	To perform continuity test, short circuit test, open circuit test and earth fault test on domestic appliances.	4
4.	To test, fit and find the fault in fluorescent tube light.	4
5.	To find the fault and repair any one heating appliances.	4
6.	To find the fault and repair any one type of fan.	6
7.	To assemble the different parts , repair and maintain the air cooler .	6
Total		32

❖ ASSESSMENT OF LABORATORY EXPERIENCES/ASSIGNMENTS :

Continuous assessment of Term Work and Term end oral/ practical examination.

❖ **SUGGESTED IMPLEMENTATION STRATEGIES :**

1. **Lecture method**
2. **Q & A technique.**
3. **Demonstration**
4. **Case study**
5. **Field visit**

❖ **SUGGESTED LEARNING RESOURCES :**

1. **PRINT :** Text books/Reference books/Manuals/Journals.
2. **NON PRINT :** CDs / PPT / Transperencies / Charts / Models

C. SPECIFICATION TABLE : (NOT APPLICABLE)

Chapter No.	Title of Chapter	Marks (1.5 x Marks allotted to chapter)	Distribution of Marks			
			Knowledge	Comprehension	Application	Total
NOT APPLICABLE						

D. REFERENCE & TEXT BOOKS:

S.N.	Title	Author, Publisher, Edition and Year Of publication	ISBN Number
1.	Study of domestic appliances & devices	K.B.Bhatia.	--
2.	Home appliances servicing	E.P.Anderson.	--
3.	Appliances manuals	Manufactures of appliances	--

E. LIST OF EXPERTS & TEACHERS WHO CONTRIBUTED FOR THIS CURRICULUM:

S.N.	Name	Designation	Institute / Industry
1.	A.M.Arekar	I/C Head, Electrical Engineering	Govt. Polytechnic, Nagpur
2.	G.V.Gotmare	Lecturer In Electrical Engineering	Govt. Polytechnic, Nagpur

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