

Book No. 19

19/0

CURRICULUM
FOR
DIPLOMA IN INFORMATION TECHNOLOGY

(FIRST AND SECOND SEMESTER)



CURRICULUM DEVELOPMENT CENTRE
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL)
RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA,
BHOPAL

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FOREWORD

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Information Technology has emerged as one of the most powerful tool for the rapid track economic growth of our country. India has undoubtedly done very well in the Information Technology sector over the last decade. The current IT export from India is around US \$ 5 billion which is projected to grow to a staggering figure of US \$ 50 billion by the year 2008 as per the NASSCOM survey. The indigenous consumption of software is also poised to increase to around US \$ 40 billion by the same time. As such the Information Technology industry has emerged as one of the fastest growing industry in our country. Such a rapid growth of IT industry, however can be assured only if we are in a position to provide the necessary rapid track human resource development to meet the needs of IT industries in India and abroad.

Considering the urgent need for increasing the intake in the Information Technology disciplines the Government of India has initiated several measures. These efforts have resulted into an addition of about 2000 seats at degree level in the IT related disciplines and about 715 seats at diploma level in Information Technology in the state of Madhya Pradesh from the academic session 2000-2001.

Though Information Technology is a new discipline of engineering but it is important to realise that IT is an inter-disciplinary area. As such it requires an effective integration of the knowledge of basic sciences, computational methods and programming languages as well as communication and network technologies. The disciplines of Electronics and Communication and Computer Engineering are therefore closely associated with the discipline of Information Technology. With the addition of new Diploma programme in Information Technology it was necessary to formulate the course curriculum keeping in view the current and future requirements of knowledge and skill in this area of vital national importance. I am indeed delighted that in a short period of time, as is expected in an IT driven environment, the Board of Technical Education, an associate of RGPV has been able to formulate the course curriculum for Diploma in Information Technology.

I am sure that the innovative curriculum developed for Diploma in IT would serve the purpose of providing an optimal mix of up-to-date knowledge and requisite skills for the IT professionals for tomorrow's IT industries and IT enabled service organisations. The exercise of curriculum innovation carried out for diploma in IT has also provided a base for curriculum innovation for other disciplines of diploma in engineering and technology currently in vogue in the polytechnics in the state of Madhya Pradesh. We wish to complete this curriculum innovation exercise during the current academic year for all the courses for which the Board is organizing the academic and examination activities.

I may add that the curriculum innovation exercise for the degree programmes in engineering and technology including a new B.E. (Information Technology) programme has already been successfully completed by the University of Technology for the colleges of

engineering in the state of Madhya Pradesh and the innovated curriculum has been implemented from the academic year 2000-2001. The innovated curriculum effectively integrates the knowledge and skills of IT in all engineering degree programmes while at the same time it promotes self-study and seminars so as to provide professional orientation to the students.

The encouragement and support received from Shri Rakesh Shrivastava, CEO of MAP_IT has gone a long way in the assessment of the needs of manpower for IT industries. I wish to place on record our sincere acknowledgment of the support received from Shri Shrivastava in the development of the innovated curriculum in IT. I also wish to express my very sincere appreciation of the efforts of the officers and staff of the Board of Technical Education specially that of Shri S.K. Verma, Secretary, Shri Shamim Uddin, Coordinator, Shri T.R. Arora, Deputy Secretary, Shri K.C. Mahajan, Controller of Examination, Dr.Sudhir Danej and Shri S.A.K. Rao, Research Officers in successfully developing innovative curriculum for the Diploma in IT with the support of experts drawn from academic institutions and IT industries.

Prof. P.B. Sharma

Vice-Chancellor,

Rajiv Gandhi Pradyogiki Vishwavidyalaya,

Bhopal
19-11-2000

PARTICIPANTS IN THE WORKSHOP
ACKNOWLEDGEMENTS

Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal was assigned the task of curriculum innovation for Diploma programme in Information Technology, in a very short span of time.

To accomplish this task of vital importance to the state of Madhya Pradesh, concerted efforts were made by the Board, Directorate of Technical Education and Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal. A three day workshop was organised on 6, 7 and 8th September 2000, in the conference hall of the Board. We are grateful to Prof. R K Shrivastava, Chief Executive Officer, Madhya Pradesh Agency for Promotion of I.T. (MAP_IT) for delivering an exciting and inspiring keynote address in the inaugural programme of the workshop. We are indebted to Prof. P.B. Sharma, Vice Chancellor of RGPV, Bhopal for chairing the inaugural session and inspiring the participants to exert themselves for innovation in curricula.

Board is highly thankful to BHEL, Bhopal, OPTEL and Central Bank of India, Bhopal for deputing their representatives to the workshop and thus provide inputs about the industry's requirement regarding Information Technology.

Board is indebted to Shri M.K.Shastry of OPTEL, Shri Binay B. Kandir of BHEL for their active participation in the workshop. We will be failing in our duty, if the continuous and caring cooperation of Shri M.M. Gupta, I/c training centre of Central Bank of India, is not acknowledged. It is he, who kept on moulding the matter, generated in the workshop, to proper shape.

Faculty of various polytechnics, is praise worthy for their synergic efforts and for bringin knowledge and experience together to prepare the final curriculum document.

Supporting staff of the board needs special thanks, for the hard work put therein to make the workshop a grand success and for making perfect arrangements of various facilities.

PARTICIPANTS IN CURRICULUM INNOVATION WORKSHOP

1. Shri K C Verma, Principal,
S V Polytechnic, Bhopal
2. Shri M M Gupta, F.M.
Central Bank Officers Training College,
51, Arera Hills,
Hoshangabad road, Bhopal
3. Shri K P Agarwal, Principal
Govt. Women Polytechnic, Chhindwara.
4. Shri M. K. Shastri, Computer Programmer,
Optel Telecommunications Ltd.
Bhopal
5. Shri Binay B. Kandir, Manager,
Informatics Centre (IFX), BHEL,
Bhopal
6. Shri D C Chaurasia, I/c HOD,
Computer Science & Engg. Deptt.
Kalaniketan Polytechnic,
Jabalpur.
7. Smt. Juhi Jain, I/c HOD,
Computer Application Deptt.
S V Polytechnic, Bhopal
8. Smt. Pushpa Vaswani, Lecturer,
Govt. Women Polytechnic, Bhopal
9. Shri Vivek Sharma, System Analyst,
SATI (Poly), Vidisha.
10. Shri Deepak Singh Tomar, Programmer
Govt. Women Polytechnic, Bhopal
11. Shri Jitendra Agarwal, Lecturer,
SATI (Poly), Vidisha.
12. Smt. Rashmi Gupta, Programmer,
S V Polytechnic, Bhopal

Coordinator of the workshop

Shamim Uddin, Coordinator,

Co-Coordinator of the workshop

T R Arora, Deputy Secretary,

M.P. Board of Technical Education, Bhopal.

DIPLOMA IN INFORMATION TECHNOLOGY

INTRODUCTION:

Information technology is growing rapidly. Increasing applications of computers in almost all areas of human endeavor has led to a vibrant computer software industry with concurrent rapid change in technology. Information technology now is being considered as fifth need of human beings after air, water, food and shelter.

The global and local demand for IT professionals outstrips the supply. NASSCOM estimate of employment, in hardcore competencies of IT sector (i.e. Mostly about software development) by year 2008, is about 11 lakhs and 11 lakhs in IT enabled services. Currently India trains approx. 68,000 IT professionals. This creates a huge gap between demand and supply. IT professionals from India have been accaclaimed world over, for their IT skills in the design of software and are in great demand, in many developed countries of the world. Many of the top notch software companies come to India for shopping of IT professionals. The country is also earning foreign exchange on account because of software exports and by the year 2008 the software exports are targeted to reach US\$50 billion.

Information technology is a generic term which encompasses all activities connected with computer based acquisition, storage, transmission, retrieval and processing of information to support the communication of knowledge in technical economic and social fields. It includes computers, consumer electronics, electronics mass media, satellite telecommunication and reprography . IT is an enabling technology, it has already contributed in the economic and social development by introducing e-banking, e-governance, ATM facilities, computerised reservation in railways, buses and airlines, networking of libraries databases, simulation of real life situations, modeling etc. There are many IT enabled business like call centres, medical transcription, back office operations, insurance claims processing maintenance of legal databases etc., which have origin in US but have been diverted by the big business houses to India, because of availability of trained manpower and low cost of operations.

In the present scenario, the state government of Madhya Pradesh has an ambitious plan of putting the state on the IT map of the country through e-governance and by opening cyber kiosk in remote places of the state for dissemination of administrative and statistical information to the inhabitants of the state. The state government is aiming at contributing 5 to 10% of the information technology output of the country, by 2008. The government has a target of providing information access to all citizens at an affordable cost.

To cater to the burgeoning demand of IT professionals, a three years Diploma in Information Technology has been proposed in many polytechnics of the state from academic session 2000-2001. The programme has been designed to meet the requirements of various users of IT. The objectives of the programme have been

chosen so that it enables the students to acquire skills from lowest level to that of industry's current standard.

The large chunk of I T services lies in the application areas and in developing softwares for industry or business requires understanding of conduction of business

Thus the challenge in designing a curriculum is to identify the areas of core-competence which is reasonably stable and provide sufficient number of electives and laboratories to accommodate changes, as the skill sets required in IT professionals are changing at a fast pace. The curriculum shall provide basic skills of learning to the students so that skills/knowledge is being continuously updated as and when required to meet the demand of profession. Consequently the curriculum has a strong laboratory and project orientation in which the use of new tools are emphasized. Most of the courses will have an associated laboratory and it is expected that they will be equipped with latest software tools.

OBJECTIVES OF THE PROGRAMME:

1. To provide trained manpower for consumption in IT sector and IT enabled services.
2. To provide skill sets in core competencies of Information Technology like programming in single user and multi-user environments, Networking, Database designing and use of communication technologies etc.
3. To provide skills in developing applications or software for which no prior computer based solutions exist.

JOB POSITIONS:

The diploma pass-outs fits into variety of jobs in IT sector and IT enabled services. The scope of employment is so wide that it is difficult to enumerate all the positions which may be available to a diploma IT pass out, however some of them are listed below:

1. Programmer.
2. Network Supervisor.
3. Assistant to Database Administrator.
4. e-commerce Supervisor.
5. Web programmer/application developer.
6. Teacher / Trainer.
7. Salesman for IT products.

IT sector offers tremendous opportunities of self-employment with incredibly small investments. Venture capitalists are pouring money at a fast pace in innovative ideas and there are many success stories of IT entrepreneurs, who started from scratch and have created big companies.

Some of the areas of self-employment may be

- Software developer.
- ISP provider.
- Training institute.
- e-business.
- Web design and hoisting.
- Video conferencing business.

JOB FUNCTIONS:

The growth of IT has triggered growth in many other sectors as well, therefore IT professionals have wide spectrum of services with variety of functions to perform. Some of the functions he/she is expected to carry out in teams, while others require independent operations. These are listed below:

The pass outs of Diploma in Information technology shall be able to

- Work on different platforms of OS like DOS, Windows, NT, UNIX, LINUX etc.
- Use office automation and DTP application packages such as MS office, PAGE maker.
- Develop scientific and business applications using high level programming languages such as C, C++.
- Develop RDBMS for given applications using latest back end tool such as ORACLE and front-end tools like VB.
- Do web designing using HTML editor, JAVA script, ASP.
- Design/visualise graphics for multi-media development in various environments using PhotoShop, Printshop.
- Supervise/manage networking technologies using co-axial cables, Ethernet twisted pairs.
- Assist Data Base Administrator in maintenance of large databases.
- Manage/customise in-house software.
- Advise organisations in procurement of appropriate hardware/software to suit their needs.
- Test software that have been out sourced.
- Do/assist in computer aided designs or manufacture.
- Write operational manuals for software.
- Assist/Design multi-media based teaching/learning packages.
- Operate/manage IT systems used in entertainment industry.
- Sales and marketing of IT products.
- Technical and field support for IT applications.

RAJIV GANDHI PROUDYOGIKI VISHWA VIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

Programme Name: Three years Diploma in Information Technology.

Name of scheme: Dip.IT_SEPT, 2000

W.e.f. Session 2000-2001

Scheme of Studies and Examinations for semester: FIRST

C O U R S E C O D E	COURSE TITLE	THEORY COMPONENT				PRACTICAL COMPONENT				T O T A L						
		LECT- URES Hrs. PER WEEK	CONTINUOUS EVALUATION	END OF THE TERM / SEMESTER EVALUATION		P R A C T I C A L Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			T O T A L					
				TERM WORK	PROG- RESSIVE TESTS (TWO)			THEORY PAPER	LAB. WORK			PRACTICAL/ ORAL EXAMINATION (VIVA)	NO	MARKS	DURA- TION (Hrs.)	
																NO.
101	COMMUNICATION SKILL	4	20	10	10	1	100	3	140	-	-	-	140			
102	APPLIED SCIENCE (PHYSICS + CHEMISTRY)	4+4	20	10	10	1	100	3	140	4	30	1	50	3	80	300
103	INTRODUCTION TO PERSONAL COMPUTERS	4	20	10	10	1	100	3	140	2	30	1	50	3	80	220
104	P.C. UTILITIES & OPERATING ENVIRONMENT	2	20	10	10	1	100	3	140	8	50	1	50	3	100	240
105	PERFORMANCE IN PROFESSIONAL ACTIVITIES (PPA)									2	-					
	TOTAL	18	80	40	40	4	400	-	560	16	140	4	200	-	340	900
																GRAND TOTAL Δ

S.No.	Total marks	Passing marks
A	400	Theory : 35%
B	200	Practical : 40%
C	-	Ind. Trg. : 50%
	TOTAL 600	Sessional : 60%

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 500
Ratio of (A) : (D) : 1:1.25

Ratio of time allotted for theory and practical portion of the courses in a programme: 1:0.89

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RAJIV GANDHI PROUDYOGIKI VISIWAVIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

Programme Name: Three years Diploma in Information Technology. Name of scheme: Dip.IT_SEPT.'2000 W.c.f. Session 2000-2001

Scheme of Studies and Examinations for semester: SECOND

Scheme of Studies and Examinations for semester: SECOND

COURSE TITLE	THEORY COMPONENT					PRACTICAL COMPONENT					T O T A L				
	LECT-URES PER WEEK	CONTINUOUS EVALUATION		END OF THE TERM / SEMESTER EVALUATION		P R A C T I C A L Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION		T O T A L					
		TERM WORK	PROG-RESSIVE TESTS (TWO)	THEORY PAPER				LAB. WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)			NO MARKS	DURATION (Hrs.)		
				I	II									NO	MARKS
201 APPLIED MATHS	4	20	10	10	1	100	3	140	-	-	-	140			
202 OFFICE AUTOMATION	2	20	10	10	1	100	3	140	6	25	1	50	3	75	215
203 COMPUTER ORGANISATION	3	20	10	10	1	100	3	140	2	25	1	50	3	75	215
204 BASIC PROGRAMMING IN 'C'	4	20	10	10	1	100	3	140	6	25	1	50	3	75	215
205 BASIC ELECTRICAL, ELECTRONICS & MEASUREMENT	4	20	10	10	1	100	3	140	2	25	1	50	3	75	215
206 PERFORMANCE IN PROFESSIONAL ACTIVITIES (P.P.A.)									2						
TOTAL	17	100	50	50	5	500		700	18	100	4	200		300	1000
GRADES TO BE AWARDED											GRAND TOTAL Δ				

S.No.	Total marks	Passing marks
A THEORY	500	Theory : 33%
B PRACTICAL	200	Practical : 40%
C Industrial Training	-	Ind. Trg. : 50%
TOTAL	700	Sessional : 60%

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 500

Ratio of (A) : (D) : 1:1

Ratio of time allotted for theory and practical portion of the courses in a programme: 1: 1.06

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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

Programme Name: Three years Diploma in Information Technology.

Name of scheme: Dip.IT_SEPT.'2000

W.e.f. Session 2000-2001

Scheme of Studies and Examinations for semester: THIRD

C O U R S E C O D E	COURSE TITLE	THEORY COMPONENT				PRACTICAL COMPONENT				T O T A L						
		LECT- URES Hrs. PER WEEK	CONTINUOUS EVALUATION	END OF THE TERM / SEMESTER EVALUATION		P R A C T I C A L Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			T O T A L					
				TERM WORK	PROG- RESSIVE TESTS (TWO)			THEORY PAPER				LAB. WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)			
								NO.	MARKS					DUR- ATION (Hrs.)	NO MARKS	DURA- TION (Hrs.)
301	MATHEMATICAL FOUNDATION FOR COMPUTERS	4	20	10	10	1	100	3	140	-	-	-	140			
302	OPERATING SYSTEMS	4	20	10	10	1	100	3	140	2	25	1	50	3	75	215
303	DATA BASE MANAGEMENT SYSTEMS	4	20	10	10	1	100	3	140	4	25	1	50	3	75	215
304	INTERNET & WEB TECHNOLOGY	2	20	10	10	1	100	3	140	6	50	1	50	3	100	240
305	OOPS TECHNIQUES USING C++	3	20	10	10	1	100	3	140	5	50	1	50	3	100	240
306	PERFORMANCE IN PROFESSIONAL ACTIVITIES (P.P.A.)									2	GRADES TO BE AWARDED					
	TOTAL	17	100	50	50	5	500	-	700	19	150	4	200	-	350	1050
																GRAND TOTAL Δ

S.No.	Total marks	Passing marks
A	500	Theory : 33%
B	200	Practical : 40%
C	-	Ind. Trg. : 50%
	TOTAL	Sessional : 60%

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 550

Ratio of (A) : (D) : 1 : 1.1

Ratio of time allotted for theory and practical portion of the courses in a programme : 1 : 1.2

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

Programme Name: Three years Diploma in Information Technology.

Name of scheme: Dip.IT_SEPT.'2000

W.e.f. Session 2000-2001

Scheme of Studies and Examinations for semester: FOURTH

C O U R S E C O D E	COURSE TITLE	THEORY COMPONENT				PRACTICAL COMPONENT				T O T A L				
		CONTINUOUS EVALUATION		END OF THE TERM / SEMESTER EVALUATION	T O T A L M A R K S	P R A C T I C A L Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM / SEMESTER EVALUATION	T O T A L					
		LECT- URES	Hrs. PER WEEK								TERM WORK	PROG- RESSIVE TESTS (TWO)	LAB WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)
				NO	MARKS	DUR- ATION (Hrs.)	NO	MARKS	DUR- ATION (Hrs.)					
401	SYSTEM ANALYSIS & DESIGN	4	20	10	10	1	100	3	140	-	-	-	140	
402	DATA COMMUNICATION	4	20	10	10	1	100	3	140	2	25	1	50	215
403	LAN DESIGN & ITS IMPLEMENTATION	4	20	10	10	1	100	3	140	2	25	1	50	215
404	MINOR PROJECT	1	-	-	-	-	-	-	8	8	50	1	50	100
405	ELECTIVE - I (Select one course)	3	20	10	10	1	100	3	140	2	25	1	50	215
406	ELECTIVE - II (Select one course)	3	20	10	10	1	100	3	140	-	-	-	-	140
407	P.P.A.								2					
	TOTAL	19	100	50	50	5	500	-	700	16	125	4	200	1025
														GRAND TOTAL Δ

S.No.	Total marks	Passing marks
A	THEORY	500
B	PRACTICAL	200
C	Industrial Training	-
	TOTAL	700

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 525

Ratio of (A) : (D) : 1:1.05

Ratio of time allotted for theory and practical portion of the courses in a programme : 1:0.84

405-ELECTIVE - I (TH:3+PR:2)
(1) DESK TOP PUBLISHING
(2) COMPUTERISED FINANCIAL ACCOUNTING

406-ELECTIVE - II (TH:3+PR:0)
(1) ENVIRONMENTAL ENGG.
(2) MARKETING MANAGEMENT
(3) ENTREPRENEURSHIP
(4) OFFICE MANAGEMENT
(5) TOTAL QUALITY MANAGEMENT

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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

Programme Name: Three years Diploma in Information Technology. Name of scheme: Dip.IT_SEPT.'2000 W.e.f. Session 2000-2001

Scheme of Studies and Examinations for semester: FIFTH

COURSE TITLE	THEORY COMPONENT				PRACTICAL COMPONENT				TOTAL			
	CONTINUOUS EVALUATION		END OF THE TERM / SEMESTER EVALUATION		P R A C T I C A L Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			TOTAL		
	LECT- URES	Hrs. PER WEEK	I	II			THEORY PAPER	LAB. WORK			PRACTICAL/ ORAL EXAMINATION (VIVA)	
					NO. MARKS	DUR- ATION (Hrs.)				NO MARKS		DUR- ATION (Hrs.)
501 INDUSTRIAL MANAGEMENT	4	20	10	10	1	100	3	140	-	140		
502 BUSINESS COMMUNICATION	3	20	10	10	1	100	3	140	-	140		
503 DATA BASE DESIGN (ORACLE & VB)	4	20	10	10	1	100	3	140	8	100		
504 MUJTI MEDIA, COMPUTER GRAPHICS & ANIMATION	3	20	10	10	1	100	3	140	5	80		
505 INDUSTRIAL TRAINING (THREE WEEKS)	-	-	-	-	-	-	-	-	1	50		
506 P.P.A.	-	-	-	-	-	-	-	-	2	GRADES TO BE AWARDED		
TOTAL	14	80	40	40	4	400	-	560	15	130	280	840
GRAND TOTAL Δ												

S.No.	Total marks	Passing marks
A	400	Theory : 33%
B	150	Practical : 40%
C	100	Ind. Trg. : 50%
TOTAL	650	Sessional : 60%

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 540
Ratio of (A) : (D) : 1:1.35
Ratio of time allotted for theory and practical portion of the courses in a programme : 1:1.07

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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

W.e.f. Session 2000-2001

Name of scheme: Dip.IT_SEPT.'2000

Programme Name: Three years Diploma in Information Technology.

Scheme of Studies and Examinations for semester: SIXTH

C O U R S E C O D E	COURSE TITLE	THEORY COMPONENT				PRACTICAL COMPONENT				T O T A L						
		LECT- URES	CONTINUOUS EVALUATION	END OF THE TERM / SEMESTER EVALUATION		P R A C T I C A L Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			T O T A L					
				THEORY PAPER	NO MARKS			DUR- ATION (Hrs.)	LAB. WORK			PRACTICAL/ ORAL EXAMINATION (VIVA)	NO MARKS	DURA- TION (Hrs.)		
															PROG- RESSIVE TESTS (TWO)	MARKS
Hrs. PER WEEK	TERM WORK	I	II	MARKS												
601	WEB DESIGN USING JAVA	4	20	10	10	1	100	3	140	6	50	1	50	3	100	240
602	MAJOR PROJECT	1	20	10	10	1	100	3	140	8	100	1	50	3	150	290
603	ELECTIVE - III (Select one course)	3	20	10	10	1	100	3	140	4	25	1	50	3	75	215
604	ELECTIVE - IV (Select one course)	3	20	10	10	1	100	3	140	2	25	1	50	3	75	215
605	P.P.A.									2						
	TOTAL	11	80	40	40	4	400	-	560	22	200	4	200		400	960

GRAND TOTAL Δ

S.No.	Total marks	Passing marks
A	400	Theory : 33%
B	200	Practical : 40%
C	..	Ind. Trg. : 50%
	TOTAL	Sessional : 60%

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 560
Ratio of (A) : (D) : 1:1.4

Ratio of time allotted for theory and practical portion of the courses in a programme : 1:2

- 603-ELECTIVE - III (TH:3+PR:4)
- (1) COMPUTER AIDED DRAFTING (CAD)
 - (2) COMPUTER HARDWARE MAINTENANCE
 - (3) e-COMMERCE

- 604-ELECTIVE - IV (TH:3+PR:2)
- (1) SOFTWARE ENGG.
 - (2) DATA SECURITY TECHNIQUES
 - (3) DATA WARE HOUSING & DATA MINING
 - (4) COMPUTER PERIPHERALS & INTERFACE
 - (5) e-GOVERNANCE
 - (6) CASE TOOLS

19/15

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL)

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER FIRST

COURSE CODE: 101

NAME OF COURSE: DIPLOMA IN INFORMATION TECHNOLOGY

SCHEME OF DIPLOMA IN INFORMATION TECHNOLOGY

(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL)

2000-2001

19/15

RATIONALE

The course is designed to provide the students with the basic knowledge and skills in the field of information technology. The course is designed to provide the students with the basic knowledge and skills in the field of information technology.

CURRICULUM

FOR

DIPLOMA IN INFORMATION TECHNOLOGY

(FIRST SEMESTER)

Scheme: Dip.IT_September 2000

Implemented from session 2000-2001

Under semester system

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
(M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

19/16

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 101

NAME OF COURSE: COMMUNICATIONAL SKILL

SCHEME: Dip. IT September 2000
COMMON WITH PROGRAMME (S):
C03, M02, E01 & OTHERS
PAPER CODE: 0014

RATIONALE

English occupies an important place in our curriculum. Besides functioning as one of the important library languages in India, it acts as a window to technical and scientific knowledge. After obtaining their Diploma and while in job they have to communicate with personnel belonging to different hierarchy. Therefore, acquiring proficiency in the language for effective communication is absolutely essential. Emphasis is being laid on the development of communication skills among the students.

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Lectures: 4 Hrs. per Week

SKILLS TO BE DEVELOPED

(A) WRITING :-

- (a) Understand & use the vocabulary items of general use besides words from the register of physical and social sciences.
- (b) Given a passage use substitutes for identified words and expressions in an appropriate manner.
- (c) Ensure that the intended communication through a written passage occurs in practice.
- (d) Express ideas contained in the prescribed units.
- (e) Write both guided and free compositions based on the prescribed text.
- (f) Construct grammatically correct sentences in English.
- (g) Express ideas contained in passages outside the text.
- (h) Write paragraphs on topics of general interest like – Day to day happenings; Match that you have seen; Scene in a railway compartment; Picnic; Your parents' etc.

Paragraphs should be of descriptive nature avoiding those on abstract topics / proverbs.

(B) READING :-

- (a) Develop the ability to read silently as well as aloud.
- (b) Involve students in reading paragraphs from the prescribed text.
- (c) Recognize main ideas, supporting details, sequence of events and causal relationship.
- (d) Develop competence and habit of using dictionaries and other reference books.

(C) LISTENING :-

- (a) Ability to follow spoken instructions.
- (b) Develop competence in taking notes while listening.
- (c) Ability to listen to news bulletins – Radio, Doordarshan, B.B.C.

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(D) SPEAKING :

- (a) Develop the ability of Speaking in the class.
- (b) Develop the ability to ask pertinent questions as well as to answer them.
- (c) Develop the ability to assert one's point of view.
- (d) Develop the ability to use conversational skills in situations like;
 - (i) Introduction/Greetings.
 - (ii) Seeking/giving information.
 - (iii) Discussing weather.
 - (iv) Asking about arrivals/departure of trains.
 - (v) Making enquiries about health.
 - (vi) Making enquiries about market places/banks/ any other public places.
 - (vii) In order to develop the above, the following components of spoken English may be included.
 - Short answer; additions to remarks; agreement/disagreement with remarks;
 - question/tags; simple pr/pr. perfect; question words; phrasal verbs.

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SCHEME OF STUDIES

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
	Section A			
1.	The Text			
	Part -I - Passages for comprehension	21	-	21
	Part -II - Short Stories.	11	-	11
	Part -III - Applied Grammar	16	-	16
	Section B			
2.	(a) Paragraph writing on topics of general interest.	8	-	8
	(b) Unseen passage.	8	-	8
	Total	64	-	64

NOTE: For spoken English integrated approach may be adopted.

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Lectures: 4 Hrs. per Week

SECTION -A

S.No.	Detailed Course Content	Hours of study
	PART - I	
	PASSAGES FOR COMPREHENSION.	21
1.	Language of science.	
2.	My Thousandth Goal.	
3.	Rip Van winkle Comes to Tour.	
4.	Robotic Revolution.	
5.	Nondestructive Testing.	
6.	Designing a car.	
7.	The wonders of camera.	
8.	Desalination or Desalting process.	
9.	Non conventional sources of Energy*.	
10.	Our Environment*.	
11.	Entrepreneurship*.	
12.	Safety*.	
	* Units against which asterisk marks have been made may be taught to students of II year Diploma in Engineering.	
	PART -II	
	SHORT STORIES	11
	(1) Selfish Giant – Oscar Wild.	
	(2) A letter to God – Gregario Lopex Y. Fuentes.	
	(3) An Astrologer's Day – R.K. Narayan.	
	(4) The Last Leaf – O' Henry.	
	(5) The Malefactor – Anton Chekov.	

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Lectures: 4 Hrs. per Week

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NAME OF COURSE: COMMUNICATIONAL SKILL

S.No.	Detailed Course Content	Hours of study
	PART – III APPLIED GRAMMAR.	16
1.	Determiners.	
2.	Auxiliaries.	
3.	Tenses.	
4.	Conditionals.	
5.	Passive.	
6.	Infinitives.	
7.	Modifiers.	
8.	Prepositions.	
9.	Subject – Verb Agreement.	
10.	Clauses & connectors.	
	SECTION – B Besides the topics included in the textbook, the course includes paragraph writing on topics of general interest and unseen passages.	8+8

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SCHEME OF ASSESSMENT

S.No.	Topic/Sub-Topics.	Distribution of marks
1.	Paragraph Writing on topics of general interest.	10
2.	Unseen Passages.	08
3.	The Text.	
	A Passages.	
	(a) One - word	08
	(b) Fill in the blanks with appropriate forms of listed words.	04
	(c) Single sentence answers.	12
	(d) Answers in 5-6 lines.	08
	(e) Essay type/Guided Comp.	10
	B. Short Stories.	
	(a) Answers in 5-6 lines.	06
	(b) Composition type.	09
	C. Applied Grammar.	25
	Total	100

RECOMMENDATIONS FOR AWARDED SESSIONAL MARKS:

In order to make the implementation of spoken English meaningful, the sessional marks of Comm. Skill be awarded as follows:

Term Work - 10 Marks.
Testing of Spoken skills - 10 Marks.

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REFERENCES

- I. Communication Skills for Technical Students Book-I, M/s Somaiya Publications, Pvt.Ltd., Marathi Granth Sangrahalaya Marg, Dadar, Bombay.
- II. Living English structure, Allen.
- III. Practical English Grammar (Exercises I), Thomson & Martinet.
- IV. English Conversation Practice, Grant Taylor.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 102

NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

SCHEME: Dip. IT September 2000
COMMON WITH PROGRAMME (S):
P05
PAPER CODE: 2051

RATIONALE
(APPLIED PHYSICS)

Physics forms a foundation for all engineering courses. The syllabus in applied physics for the students of first year of three years Diploma programme in Information Technology has been developed to attain the following objectives

- To develop habit of Scientific enquiry
- To understand basic phenomena of physics which are used in engineering.
- To comprehend the required pre-requisite knowledge for technical subjects.

The different topics in physics for the course have been identified on the following basis.

- (a) The attained level of students in physics at entry level in this course.
- (b) Reference to various subjects of Production Engg.
- (c) Continuity of sequence for logical development of the course.

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SCHEME: Dip. IT September 2000
 COMMON WITH PROGRAMME (S):
 P05
 PAPER CODE: 2051

SCHEME OF STUDIES
(APPLIED PHYSICS)

S. NO.	TOPIC	SCHEME OF STUDIES	
		Hrs. of Study	
		Theory	Practical
1	S.I. Units	2	10
2	Motion	5	
3	Physics of fluids	8	
4	Simple Harmonic motion and waves	2	
5	Ultrasonics	2	
6	Heat and internal energy	3	6
7	Expansion of solids, liquids and gases	3	
8	Heat and work	3	
9	Measurement of high temperature	5	10
10	Reflection of light at plane and spherical surface	5	
11	Refraction of light at plane and spherical surface	5	
12	Dispersion of light	5	6
13	Natural and artificial magnets, Electromagnet	7	
14	Modern physics : Radio Activity Photoelectric Effect, x-rays, Laser	9	
	Total	64	32

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S. No.	Detailed Course Content	Intended Learning Objectives	Hours of study
1.	<p>SI UNITS AND MEASUREMENTS</p> <ul style="list-style-type: none"> -Fundamental units -Derived units -SI units and their importance and notation -Measurement of length -Principle of <ol style="list-style-type: none"> a. Vernier b. Micrometer screw gauge c. Spherometer -Measurement of mass, use of physical balance. -Measurement of time with stop watch, electronic watches and atomic clock. 	<p>Understand units systems</p> <ul style="list-style-type: none"> -Define fundamental units. -Derive units for simple physical quantities. -State base S.I. units. <p>Know how to use the vernier micrometer, screw gauge and spherometer for taking measurements</p> <ul style="list-style-type: none"> -Explain importance of SI units. -Indicate symbols for important physical quantities and their SI units. -Define least count. -Calculate least count of a given vernier, micrometer, screw gauge and spherometer. -Measure dimensions accurately using the above (Relevant laboratory work to be incorporated) <p>Understand how to use physical balance.</p> <ul style="list-style-type: none"> -Explain the method of using physical balance. -Measure mass using a physical balance. <p>Understand the use of different devices for the measurement of time.</p> <ul style="list-style-type: none"> -Enumerate the time measuring devices. -Measure time durations with stop watch (time of rotation, time period of a plumb bob etc.) (Relevant laboratory experiment should be designed) 	2
2.	<p>MOTION</p> <ul style="list-style-type: none"> -Linear motion -Speed, velocity, acceleration. 	<p>Understand the concept related with linear motion</p> <ul style="list-style-type: none"> -Define velocities and acceleration. -Differentiate between velocity and speed. -Sketch time displacement and time speed graphs. -State equation of motion. -Apply equation of motion in solving numerical problems. -Solve simple problems of motion under gravity. <p>Understand the concept of mass, weight and weightlessness (State condition for weightlessness).</p> <ul style="list-style-type: none"> --Differentiate between mass and weight. -Explain apparent increase and decrease in weight in a moving lift. 	5
2.1	<ul style="list-style-type: none"> Linear motion -Speed time graph -Displacement-time graph -Equations of motion -Laws of motion -Motion under gravity. -Concept of mass, weight and weightlessness. 		

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
2.2	<p>Circular motion</p> <ul style="list-style-type: none"> -Motion of a particle on the circle with constant speed -Angular velocity and angular acceleration -Relation between linear and angular velocities -Centripetal and centrifugal forces -Relation between degrees and radians 	<p>Understand the concepts related with circular motion</p> <ul style="list-style-type: none"> -Define angular velocity and angular acceleration -State relation between linear velocity and angular velocity -Define centrifugal and centripetal forces and indicate their points of application -Relate time period with frequency. -Derive relation between degrees and radians. 	
2.3	<p>Rotary motion</p> <ul style="list-style-type: none"> -Axis of rotation -Moment of inertia -Radius of gyration -Kinetic energy of rotation 	<p>Understand the concept of rotary motion</p> <ul style="list-style-type: none"> -Define axis of rotation. -Explain the phenomena of separation of liquids of different densities by rotation method. -Justify the position of mudguard on cycle wheels. -Define radius of gyration. -Derive an equation for K.E. of a rotating body. -Compare mass in translational motion with M.I. in rotational motion. 	
→ 3	<p>PHYSICS OF FLUIDS</p> <ul style="list-style-type: none"> -Buoyancy Archimede's Principle -Laws of floatation 	<ul style="list-style-type: none"> -Understand the concept of buoyancy and Archimede's principle. -Define Buoyancy -State Archimede's Principle. -Verify Archimede's Principle experimentally. <p>Understand the laws of floatation</p> <ul style="list-style-type: none"> -State laws of floatation -Enumerate practical applications of this phenomenon. -Explain why iron piece dips in water while it floats in mercury. -Explain underlying principle of swimming. 	

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
3.1	<p>Uphrust</p> <ul style="list-style-type: none"> -Pressure in liquids Pascal's law, -Hydraulic jacks 	<p>Understand Pascal's law</p> <ul style="list-style-type: none"> -State Pascal's law -Prove Pascal's law (Relevant laboratory experiments). -Differentiate between laboratory pressure and force, experiment. -Explain the working of Bramah's hydraulic press. 	2
3.2	<p>Atmosphere</p> <ul style="list-style-type: none"> -Pressure of fluids -Atmospheric pressure its units and measurement in terms of height of mercury column (simple Barometer) -Atmospheric pressure and altitude -Manometer -Pressure gauge 	<p>Understand the principle of barometer</p> <ul style="list-style-type: none"> -Explains the reason for about 70- 75 cms. height of mercury column in a simple barometer. -Give reason for change in barometer Pressures at different altitude. <p>Understand the reasons for using mercury in barometer.</p> <ul style="list-style-type: none"> -Explain why mercury is used as barometric substance -Estimate length of the glass tube required, if water is taken in place of Hg. -Measure absolute pressure and pressure difference. <p>Understand the working of pressure gauge.</p> <ul style="list-style-type: none"> -Describe the construction of pressure gauge -Explain working of pressure gauge -List at least five situation where pressure gauges are used. 	1

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
3.3	<p>Surface Tension</p> <ul style="list-style-type: none"> -Molecular force, cohesive and adhesive force -Definition of surface tension -Surface Energy -Examples showing existence of surface tension -Convex and concave meniscus of liquids -Angle of contact -Relation between surface tension and capillary rise. -Factors that affects surface tension. 	<p>Understand the concept of surface tension.</p> <ul style="list-style-type: none"> -Define cohesive and adhesive force -Explain why free surface of a liquid behaves like a stretched membrane. -Define surface tension and indicate its direction. -Define angle of contact <p>Understand the relation between surface tension and capillary rise.</p> <ul style="list-style-type: none"> -Derive relation between surface tension and capillary rise. -Give examples of existence of surface tension. -Explain the phenomenon of formation of droplets of water -Give reason why surface tension decreases with temperature -State factors which affect capillary rise. -Sketch angles of contact for concave and convex meniscus -Sketch angles of contact for concave and convex meniscus -Determine surface tension by capillary rise method. -State how is the knowledge of surface tension helpful in practical life & engineering situations. 	

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
3.4	Viscosity - Streamline and Turbulent flow -Velocity gradient -Viscous drag and coefficient of viscosity -Stokes law (statement) -Flow of liquids through narrow tubes. Poiseuille's law -Method for determining of coefficient of viscosity	Understand the concept of viscosity Differentiate between streamline and Turbulent flow. -Define Velocity gradient -Derive relation for coefficient of viscosity Understand Stokes law -Give the statement of Stokes law -Define coefficient of viscosity -State Stoke formula and explain its notations Know the method of determining coefficient of viscosity (Relevant experiment) -Explain method of experimental determination of coefficient of viscosity Understand effect of pressure and temperature on coefficient of viscosity. -State effect of pressure and temperature on coefficient of viscosity -Describe the application of knowledge of viscosity.	
4.	SIMPLE HARMONIC MOTION AND WAVES -Periodic motion -Simple Harmonic motion as a projection of uniform circular motion -Characteristics of S.H.M. -Definition of time period, amplitude and frequency. -Examples of simple pendulum, loaded springs, stretched strings . Waves on the surface of water and sound waves. -Longitudinal and transverse waves mechanism of wave propagation. -Knowledge of reflection, refraction, interference and diffraction of sound waves	Understand the characteristics of S.H.M. and its importance. -Define S.H.M. and -State its importance -Define phase, amplitude and frequency -State characteristics of S.H.M. -State & use relation between time, length & gravity (giving time period for a pendulum bob) Understand principle of formation of transverse and longitudinal waves. (Develop the topic treatment to explain the same for high waves also) -Explain formation of transverse waves on the surface of water.	2

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
		-Explain formation of longitudinal waves in air. -Differentiate movement of medium in two types of waves -Derive relation $V = n(\lambda)$ -Explain that it is the disturbance, which is transmitted, not the medium from one place to other. Understand the phenomena of reflection, refraction, interference and diffraction in case of sound, light and x-rays. -Explain qualitatively the existence of reflection, refraction, interference and diffraction of sound. -Predict the same effect for light and x-rays due to their wave nature	
5.	ULTRASONICS -Audible frequencies, infrasonic and Ultrasonic -Production of ultrasonic waves magnetosriction and Piezo electric generators. -Uses of ultrasonics in industry Especially in cold welding, drilling and etching, aluminium welding, cleaning of narrow slots, measuring small thickness etc.	Know about ultrasonic waves and its uses in the engineering field. -State audible range of sound -Define ultrasonic waves -Explain production of ultrasonics -State applications of ultrasonics -State its importance in non-destructive testing.	2
6.	HEAT AND INTERNAL ENERGY -Concept of heat as molecular motion -Heat capacity and specific heat -Calorimetry -Latent heat	Understand the concepts related with heat energy. -Explain that heating increases internal energy of molecules -Relate temperature with heat energy -Define specific heat and thermal capacity -etc.	3

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
		know to find out heat lost or gained during a process -Calculate heat lost and heat gained -Explain change of state due to heat energy. -Define the term latent heat -Calculate latent heat quantity in transformation of state of water -Practical use of latent heat information. -State that quantity of heat is measured by calorimetry etc.	
7.	EXPANSION OF SOLIDS, LIQUIDS AND GASES -Definitions of coefficients of linear and volume expansions. Real and apparent expansions of liquids. -Anomalous expansion of water -Boyle's law and Charle's law -Standard temperature and pressure	-Define coeff. of linear and volume expansion -Differentiate between real and apparent expansion of liquids Know about changes in size due to application of heat. -Appreciate the anomaly in expansion of water as a boon of nature. Understand Boyle's and Charle's law. -State Boyle's law and Charle's law. -Define standard temperature & pressure -State how knowledge of standard temperature and pressure is useful in engineering situation.	3
8.	HEAT AND WORK -First law of thermodynamics -Mechanical equivalent of heat -Specific heat of gases -Relation ($CP-CV=R/J$) -Isothermal and adiabatic changes	Understand first law of thermodynamics -Explain the relation between work and heat energy -Define mechanical equivalent of heat Justify two specific heats of gases. -Name two specific heats of gases -Give reason for two specific heats of gases. -Describe why specific heat at constant pressure is more.	3

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
		Know about isothermal and adiabatic changes. -Distinguish between isothermal and adiabatic changes. -State engineering applications where concept of Cp, Cv, adiabatic & isothermal expansion are used to understand underlying phenomena.	
9.	MEASUREMENT OF HIGH TEMPERATURE -Gas thermometer -Platinum resistance thermometer -Seeback effect and thermoelectric thermometer thermocouple. Thermopile -Optical pyrometer -Comparative study for range and accuracy of above thermometers	Know the relation between temperature and pressure. -State the relation between pressure and temperature -Calculate temperature from pressure measurements Understand the principle of resistance thermometer -State the principle of resistance thermometer -Write the formula for temperature measurement using electrical resistance. Understand the working principle of thermocouple. -Define temperature of inversion and neutral temperature. -Relate thermo e.m.f. with temperature Know about optical pyrometer -Explain working of optical pyrometer -State the situation in which different thermometers may be used. -Compare merits and demerits of different thermometer. -Compare range & accuracy of gas, liquid thermoelectric and optical thermometers -State the fields of uses for each type of thermometer.	5

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
10.	<p>REFLECTION OF LIGHT AT PLANE AND SPHERICAL SURFACES</p> <ul style="list-style-type: none"> -Laws of reflection, rotation of mirror, -Definition of centre of curvature, radius of curvature, principal axis. Principal focus and focal length. -Geometrical construction of ray diagram for the formation of images in concave and convex mirror. magnification, sign convention, uses of mirrors. 	<p>Understand laws of reflection at plane & spherical surfaces.</p> <ul style="list-style-type: none"> -Distinguish plane, concave and convex mirrors. -Define focal length. -State laws of reflection. -State the application of laws of reflection in practical life & engineering application. -Verify laws of reflection on plane mirrors -etc. Know the method of geometrical construction of ray diagrams. -Draw ray diagrams for the formation of image in concave and convex mirror. -Solve numerical, if any two quantities out of u, v, f are given (Mirror formula $1/f = 1/v + 1/u$, derivation not required). -Identify real and virtual image. 	5
11.	<p>REFRACTION OF LIGHT AT PLANE AND SPHERICAL SURFACE</p> <ul style="list-style-type: none"> -Refraction at a plane surface -Laws of refraction -Refractive index and its definition on the basis of speed of light -Critical angle and total internal reflection of light -Formation of images in convex and concave lens -Lens maker's equation -Combination of lenses -Power of lens -Simple and compound microscope (Magnification without proof) 	<p>Understand laws of refraction at plane & spherical surfaces.</p> <ul style="list-style-type: none"> -State laws of refraction. -Define refractive index. -Explain the phenomena such as mirage, brilliancy of diamonds. -State that light velocity is maximum in vacuum. -Explain the deviation due to change in velocity of light (Derivation of equation is not required). Know about the working and magnifying power of simple and compound microscope. -Draw ray diagrams for the simple and compound microscope. -Calculate magnifying power for given eyepiece and objective 	5

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S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
		<ul style="list-style-type: none"> - Sketch a compound (metallurgical) microscope. -Describe construction of metallurgical microscope. -State range of magnification of optical-metallurgical microscope. -Describe how different magnifications are obtained .etc. 	
12.	<p>DISPERSION OF LIGHT</p> <ul style="list-style-type: none"> -Refraction through prism, angle of minimum deviation and their relation -Dispersion and spectrum dispersive power, pure and impure spectrum -Electromagnetic spectrum and its visible range. 	<p>Understand the phenomenon of dispersion of light</p> <ul style="list-style-type: none"> -Determine the angle of minimum deviation with the help of graph -State the orders of colours in a pure spectrum. -Distinguish between ultraviolet and infra-red light -State visible range of wave lengths and frequencies. 	5
13. 13.1	<p>MAGNETISM</p> <p>NATURAL AND ARTIFICIAL MAGNET</p> <ul style="list-style-type: none"> -Magnetic materials -Behaviour of earth as a huge magnet -Molecular Theory of magnetism -Coulomb's inverse square law -Magnetic lines of force -Magnetic Induction -Magnetic induction due to a bar magnet in two standard position -Uniform and non-uniform magnetic field - Behaviour of a magnet placed in a uniform magnetic field. 	<p>Know about magnetic and non-magnetic materials</p> <ul style="list-style-type: none"> -Distinguish between magnetic material and non magnetic material -List two magnetic materials -State the direction of Earth Magnetic field. <p>Understand the molecular theory of magnetism and Coulombs inverse square law.</p> <ul style="list-style-type: none"> -Explain the magnetism on molecular theory -State coulomb's law -Define pole strength 	7

DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
 COURSE CODE: 102

SCHEME: Dip. IT September 2000
 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
		<ul style="list-style-type: none"> -Give reason why magnetic lines of force do not cross each other -Understand the concepts of magnetic induction -Calculate magnetic induction due to a bar magnet in standard positions. Represent uniform field with the help of lines of force Analyze the couple formed due to a uniform magnetic field. (Relevant demonstration in lab desired) -Derive the expression for couple due to a uniform magnetic field on a magnet placed in it. 	
13.2	<p>ELECTROMAGNETISM</p> <ul style="list-style-type: none"> -Magnetic induction of a solenoid -Effect of placing soft iron core in solenoid. -Magnetic permeability -Relation between magnetic field developed and strength of electric current in a solenoid. -Magnetic particle test. -Magnetic Arc Blow. 	<ul style="list-style-type: none"> Know about magnetic effect of electric current and the factors, which influence magnetic field. -Indicate the directions of magnetic field with the direction of current. -State the factors, which influence magnetic field. -Compare the permeability of iron with other materials. Know about magnetic particle test and arc blow. -Suggest non-destructive testing method for a finished job -Explain the term magnetic arc blow. 	
14.	<p>MODERN PHYSICS</p>	<p>Understand the phenomenon -radio activity</p>	9
14.1	<p>RADIO ACTIVITY</p> <ul style="list-style-type: none"> -Radio active substances. -Properties of Alpha, Beta and x-rays -Radio activity- a nuclear phenomena -Simple disintegration, equation products 	<ul style="list-style-type: none"> -Give names of at least four radio active substances -Distinguish particle as Helium nucleus and 'beta' electron and 'Gamma'-rays as very hard x-rays (light of very-very high frequency) 	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
 COURSE CODE: 102

SCHEME: Dip. IT_September' 2000
 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
	-Half life and decay constant and their relation.	-Write expression for Alpha, Beta disintegrations. -Define half life -State relationship between half life and Decay constant (without derivation)	
14.2	PHOTOELECTRIC EFFECT -Photo sensitive material -Photo electron , photo electric effect -Photo cell -Plank quantum law -Einstein photo electric equation -Threshold frequency	Understand photo electric effect -State names of few photosensitive materials -Explain photo emission -Draw circuit diagram for photo cell Understand Plank's quantum law -State Plank's quantum law -Write photo electric equation -Explain existence of threshold frequency Know use of photo cell	
14.3	X-RAYS -Accidental discovery of x-rays. -Production of x-rays Coolidge tube -Idea of x-rays diffraction photograph -use of x-rays in destructive testing in industry (metal castings, welding joints etc.)	Understand the phenomenon of x-rays -State uses of photo cell -State that x-rays are Electro magnetic radiation's like visible light of very high frequency -State properties of x-rays -Distinguish soft and hard x-rays wave lengths -Explain that x-ray diffraction gives very fine details of inner structure Know use of x-rays in engineering field -Explain use of x-rays in detecting defects in metal castings and welding joints.	

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SEMESTER: FIRST
 COURSE CODE: 102

SCHEME: Dip. IT September' 2000
 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
14.4	<p>LASER</p> <ul style="list-style-type: none"> -Description of Maser and Laser -Definition of laser -Out line of the method of production of laser. -Use of laser in engineering cutting, making holes in ceramics and super-hard metals etc. 	<ul style="list-style-type: none"> Know about laser and its uses in the field of engineering. -Explain abbreviations of the terms Maser and Laser. -Define laser. -Appreciate the enormous energy possessed by coherent highly parallel (channelised) light in same phase. -State situations in which Lasers are used. 	2

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 102
NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S):
P05
PAPER CODE: 2051

LIST OF EXPERIMENTS
(APPLIED PHYSICS)

Practicals: 2 Hrs. per week

S.No.	Name of experiments	Hours of study
	Heat -	Total 32 Hrs.
1.	To determine specific heat of solid by the method of mixture	
2.	Determination of latent heat of steam.	
3.	To verify Boyle's law.	
4.	To determine J by searle's method (friction-cone method)	
	Light -	
5.	To find focal length of a concave mirror by u-v method.	
6.	To calculate refractive index of glass with respect to air by drawing rays in a glass slab	
7.	To calculate focal length of convex lens by u-v method.	
8.	To determine refractive index of glass with respect to air by angle of incidence and angle of deviation curve method.	
	Magnetism	
9.	To locate neutral points by drawing lines of force of a bar magnet in two standard positions	
10.	To study the pole strength developed in an electromagnet with current	
11.	To determine time period for various lengths of simple pendulum and hence calculate 'g'	
12.	To measure capillary-rise and hence calculate surface tension with the help of a travelling microscope.	
13.	To determine coefficient of viscosity of water by capillary flow method (using Poiseuille's formula).	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 102
NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)
SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S):
P05
PAPER CODE: 2051

REFERENCES
(APPLIED PHYSICS)

1. Applied Physics, Vol. I & Vol. II, Saxena H.C & Singh Prabhakar.
2. Physics, T.T.T.I., Bhopal Publication.
3. Physics part I & part II, Halliday D. & Resnick R..
4. Physics part I & part II (for 10+2 students.), Das S.K., Sisodia M..L., Neher P.K.. & Kachhawa C.M.
5. Engineering Physics (SI Version), Rao B.V.N.
6. Modern Physics, part I & part II, Rao B.V.N.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 102
NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S):
P05
PAPER CODE: 2051

RATIONALE
(APPLIED-CHEMISTRY)

As the knowledge of Chemistry is essential for a technician, the syllabus in applied chemistry for the students of three years Diploma programme in Information Technology has been developed in view of the following abilities required to be developed in the students.

- Develop habit of Scientific enquiry
- Understand the changes in structures, properties of matters and processes involved.
- Enable students to develop essential ability to investigate cause – effect relationship.
- Develop ability to predict results in different engineering applications under given conditions.
- Comprehend the required pre requisite knowledge for understanding technical subjects.
- understand the chemistry of essentials for various engineering materials.
- Topics like alloys, adhesives, polymers lubricants have been incorporated with special reference to the requirement of production engineering and information technology students.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 102

NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S):
P05
PAPER CODE: 2051

SCHEME OF STUDIES
(APPLIED CHEMISTRY)

S. NO.	TOPIC	SCHEME OF STUDIES	
		Theory	Practical
1	Atomic Structure	7	-
2	Periodic Classification of Elements	6	-
3	Heavy Metals	7	2
4	Alloys	7	2
5	Redoximetry	7	6
6	Electro' -Chemistry	3	2
7	Corrosion	9	5
8	Polymer	3	-
9	Chemistry of Paints & Varnishes.	4	5
10	Lubricants	6	5
11	Chemical - Bonding and Adhesives	5	5
	Total	64	32

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
 COURSE CODE: 102

SCHEME: Dip. IT_September' 2000
 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
1.	ATOMIC STRUCTURE:	Understand the atomic structure.	7
1.1	Discovery of Electron, Proton & Neutron.	(Film or Chart to be shown in the class) -Write the fundamental particles of atom.	
1.2	Rutherford model and modification of Boars.	Know about different experiments /research experiments conducted in the field of atomic structure.	
1.3	Bohrburry scheme of distribution of electron in various orbits. Sommerfield relativistic atom model.	-Explain the discovery of fundamental particles electrons, protons and neutron of an atom.	
1.4	Idea of S,P,d,f subshells.	-Explain arrangement of electrons around the nucleus.	
1.5	Electron cloud concept	(Home Assignment to be given for drawing the electronic structure of few atoms) - Explain the concept of the capacity of S..P.d.f. orbitals. -Explain the concept of electron cloud.	
2.0	PERIODIC CLASSIFICATION OF ELEMENTS:	Understand the classification of elements.	6
	- Introduction to periodic table	(Charts be shown depicting	
	- Periodic law based on atomic numbers.	- Outermost orbit in full.	
	- Brief description of periodic table, groups and periods.	- Outermost incomplete orbit.	
	- Periodicity and electron affinity.	- Next to the outer most orbit incomplete etc.	
	- Classification of elements based on S,P,d,f. orbitals.	- Semimicro and spot test analysis of these metals in laboratory.) Describe the history and prediction about the undiscovered elements.	
		- Define the term atomic number.	
		- State periodic law based on atomic number.	
		- Identify difference between groups and periods.	
		- Explain arrangement of elements in periodic table.	
		- Explain the terms electronaffinity and periodicity.	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
 COURSE CODE: 102

SCHEME: Dip. IT_September' 2000
 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
3.	<p>HEAVY METALS:</p> <ul style="list-style-type: none"> - Occurrence - Properties and engineering uses of Heavy Metals with special reference to Cu, Fe, Zn, Pb and Al. 	<ul style="list-style-type: none"> - Identify the names of elements, which have electrons in S,P,d,f. orbital blocks. Know the physical and chemical properties of common metals. (Chart and model to be shown, Emphasis should be laid on the Chemical reactions taking place during various stages). -Write the physical and chemical-properties of Heavy Metals. -Correlate property variation with atomic number & placing of these elements in periodic table. 	7
4.	<p>ALLOYS:</p> <ul style="list-style-type: none"> - Properties and Engineering uses of common alloys like Brass, Bronze, German Silver, Duralumine, Solder, Stainless steel, pressure & die Casting alloy. Bearing alloy 	<ul style="list-style-type: none"> Know the properties and uses of common alloys (Various samples of the alloys may be demonstrated in the classroom.) -Enumerate properties of common alloys. -State uses of common alloys in the field of engineering. -Deduce variation of engineering properties by the addition of different elements in an alloy. 	7
5.	<p>REDOXIMETRY:</p> <ul style="list-style-type: none"> - Redoximetry with special reference to oxidising action. -and properties of cyanide, nitride, oxide, epoxide, carbonate, hydroxides and hydrides. 	<ul style="list-style-type: none"> Understand the concept of Redoximetry. Explain the process of oxidation and reduction. -State the effects of the oxidising and /or reducing of the salts like Cyanides, Nitrides, Oxides, Epoxides, Carbonates, Hydroxides and hydrides used in the treatment of metals. -Describe the engineering application of salts. -State at least 4 methods of protection of metals against formation of salts. 	7

DIPOMA IN INFORMATION TECHNOLOGY

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SEMESTER: FIRST
COURSE CODE: 102

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
6.	<p>ELECTROCHEMISTRY</p> <ul style="list-style-type: none"> -Process of Electrolysis. -Laws of Electrolysis. -Electrolysis with special reference to Electroplating and Electrolysis -Introduction to Electrochemical series. 	<ul style="list-style-type: none"> -Explain the phenomenon of protection of metals against salts' formation Understand the process of electrolysis (Numerical examples to be given in the class) -Explain the process of electrolysis -State the law of Electrolysis - Name at least 5 commonly used electroplating processes (Film on the principles of Electrolysis and the process of Electroplating be shown in the class.) -State the fields of engg. application of each these electroplating processes -Apply the principles of electrolysis in the process of electroplating. -Suggest the ingredients and the conditions of Electroplating such as time, voltage, safety etc. for required thickness. -Explain the effect of reactions among the metals present in the electrochemical series. 	3
7.	<p>CORROSION :</p> <ul style="list-style-type: none"> - Meaning of corrosion. -Types of corrosion - Protection against corrosion. 	<ul style="list-style-type: none"> Understand the process of corrosion -State the definition of corrosion. -Correlate that to oxidation, which is one of the most important process of corrosion.. 	9

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SEMESTER: FIRST
 COURSE CODE: 102

SCHEME: Dip. IT_September' 2000
 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
	<p>- Protective coatings :</p> <p>(A) Inorganic coating</p> <ul style="list-style-type: none"> - Metal coating - Cladding - Electrodepositions - Nonmetallic coatings <p>(B) Organic coatings :</p> <ul style="list-style-type: none"> - Paints and - Varnishes - Enamels etc. 	<p>(Practically verify in laboratory the corrosion on metal parts by different mechanisms)</p> <ul style="list-style-type: none"> -State that corrosion can be due to to stress concentration , erosion, electrochemical, direct chemical etc. -Infer that corrosion can be intergranular or grain boundary corrosion without change in concentration or chemical composition. -Give the examples of each type of corrosion in practical field. -State the methods of containing corrosion due to environmental effects. <p>Know about protection against corrosion</p> <ul style="list-style-type: none"> -State the different types of protective coatings on the surface (Perform corrosion protection on metal parts by at least one method in the laboratory). --Explain the procedure of the preparation of surface for hot dip galvanizing and tinning. -Describe the process of hot dipping in molten metal, cladding, metal spraying cementation, processes & vapour deposition, non-metal coating etc. -Explain the process of electrodeposition. -State the fields of application of each. -Explain the process of applying coatings of vitrumenous and porcelain enamels. -Enumerate various types of pigments resins, solvent and thinners used for coatings. - State the purpose of applying or using primers, thinners etc. 	

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SEMESTER: FIRST
 COURSE CODE: 102

SCHEME: Dip. IT_September' 2000
 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
8.	<p>POLYMERS :</p> <ul style="list-style-type: none"> -Polymerisation and condensation. -Properties & uses of -Styrenes fluorocarbons, properties, and uses of ethene, ethylene, PVC, Polythene, Polyester, Polymides and Bakelite cellulose. 	<ul style="list-style-type: none"> -State that these non-metallic coatings are usually renewed at regular intervals under corrosive environment. Understand the process of Polymerisation and condensation (Student should be conversant with the fastly expanding list of plastics and their uses). -Define polymerisation and condensation. -Explain the process of preparation of various polymers. -State the properties of various polymers. -State the engineering uses of polymers such as Styrenes fluorocarbon, polypropeelene, Polyester., etc. 	3
9.	<p>CHEMISTRY OF PAINTS AND VARNISHES:</p> <p>Definition of paints</p> <ul style="list-style-type: none"> -Requisites of good constituent of paints. -Definition of varnish. -Types of varnish -Constituents of varnish. 	<ul style="list-style-type: none"> Know about the paints and varnishes. (A visit to plastics Industry). -List the various ingredients of various polymers. (Experimentally verify the metal protection by paint and/or varnish) -State the process for the preparation of various kinds of polymers. -Give the functions of paints and varnishes. (Practically do painting on a metal part in systematic manner noticing the chemical process and impact of each step) -Name the ingredients used for the preparation of paints and varnishes. -Enumerate at least five types of paints and varnishes. -State the characteristics of a good paint and varnish. -Describe at least two methods of applying paints. 	4

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SEMESTER: FIRST
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 NAME OF COURSE: APPLIED SCIENCE
 (PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
10.	<p>LUBRICANTS :</p> <ul style="list-style-type: none"> -Definition of lubricant. -Orientation of molecules of lubricating oil. -Types : fluid & boundary -Properties of lubricants -Significance of properties -Semisolid lubricants; Greases -Solid lubricants; graphite. -Selection of lubricants. 	<ul style="list-style-type: none"> -Give reasons for need of renewing paint coats at predetermined intervals of time.- -State at last three engineering applications of varnishes -Compare paint protection with metal coating protection methods. <p>Know the functions and properties of lubricants. (Experiments must be performed on the properties of lubricating oil such Flash point, Fire point, Cloud and pour point, Emulsification etc.)</p> <ul style="list-style-type: none"> -Define the lubricant. -Define the viscosity, flash point, fire point, viscosity index etc. -List the properties to be looked into the selection of a proper lubricant for a particular set of machine parts/ assembly part. -Classification of lubricants into liquid, semisolid solid lubricants. -State at least 3 engg. application of each type of lubricant. -List different types of commercially available greases and lubricant oils. -Name the ingredients of these greases & lube-oils. -Describe the function of these ingredients. -Identify situation where lube oils are preferred over greases & vice-versa. 	6

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 102

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

S.No.	Detailed Course Content	Intended Learning Objectives	Hours of study
11.	<p>CHEMICAL BONDING & ADHESIVES</p> <ul style="list-style-type: none">-Combining capacity of an atom-Valency-Types of chemical bonding-Metallic bonding-Definition of Adhesives.-Types. of Adhesives-Engineering application of adhesives.-Condition affecting the binding power of adhesive.-Commercially available adhesive for metal to metal & nonmetals.	<p>Understand the concepts related to chemical bonding (Perform adhesive joining of thin metal sheet & assess/find out its peel-strength)</p> <ul style="list-style-type: none">-Explain the term combining capacity of an atom.-Explain the term valency.-List the types of valency.-Give the examples of different types of chemical bonding in compounds.-Explain the metallic and hydrogen bonding. <p>Know about adhesives and their applications in engineering fields.</p> <ul style="list-style-type: none">-Explain the term adhesive.-List the types of adhesives.-Select the proper adhesives on the basis of their binding power.-Enumerate commercially available adhesives for metal to metal and metal with non-metal applications.	5

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 102
NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S):
P05
PAPER CODE: 2051

LIST OF EXPERIMENTS
(APPLIED CHEMISTRY)

Practicals: 2 Hrs. per week

S.No.	Name of experiments	Hours of study
1.	Identification of one cation and one anion in a given sample of ore/ Powder/ Mixture.	32 Hrs.
2.	To determine percentage of copper on a given sample of brass iodometrically.	
3.	To determine the percentage of iron in an iron salt by Redoximetry.	
4.	Colourimetric estimation of metals in a given sample of an alloy.	
5.	To set up a denial-cell and interpret the electrochemical theory of corrosion.	
6.	To prepare common plastics such as Bakelite.	
7.	To find out flash point of dry and non-drying lubricating oil.	
8.	To find out fire point of dry and non-drying lubricating oil.	
9.	Determination of viscosity of lubricating oil By Red-wood viscometer.	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
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NAME OF COURSE: APPLIED SCIENCE
(PHYSICS+CHEMISTRY)

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S):

REFERENCES

(APPLIED CHEMISTRY)

1. Applied Chemistry, Jain P. C.
2. Engineering Chemistry, Rao & Agrawal
3. Engineering Chemistry, Uppal
4. A text book of Chemistry of Engineering Materials, Aalgar M. A. /Paul B.
5. Material Science, Narang B.S.
6. Chemistry of Engineering Materials, Agarwal C.L.
7. Systematic Inorganic Chemistry, Singh Niranjana / Singh Joginder
8. Physical Chemistry, Glasstone
9. Applied Chemistry, Shrivastava & Shrivastava, Chandra Prakashan.
10. Modern Text Book of Applied Chemistry, Saxena, H.C., Jain Prakashan, Indore
11. Polytechnic Chemistry, Shrivastava & Shrivastava, PBS Publishing House, Bhopal.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 103
NAME OF COURSE: INTRODUCTION TO P.C.

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5001

RATIONALE

In the first semester of diploma in information technology, students should be well acquainted with the environment in which they shall work. This subject is designed to make student aware of operating systems: Dos, Windows and P.C. utilities. So that in subsequent semester, it would be easy for them to work in such environments.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST

COURSE CODE: 103

NAME OF COURSE: INTRODUCTION TO P.C.

SCHEME: Dip. IT_September' 2000

COMMON WITH PROGRAMME (S):

PAPER CODE: 5001

Lectures: 4 Hrs per week

Practicals: 2 Hrs. per week

SCHEME OF STUDIES

S.NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of study		
		Theory	Practical.	Total
1	Introduction to Personal Computers	12	06	18
2	Computer Devices	14	08	22
3	Personal Computers	12	06	18
4	Computer Software	14	06	20
5	Programming Languages	12	06	18
	Total	64	32	96

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
 COURSE CODE: 103
 NAME OF COURSE: INTRODUCTION TO P.C.

SCHEME: Dip. IT_September' 2000
 COMMON WITH PROGRAMME (S):
 PAPER CODE: 5001

Lectures : 4 Hrs. per Week

S. No.	Detailed Course Content	Hours of study
1.	INTRODUCTION TO COMPUTERS	
	1.1 Computer System Characteristics and capabilities	02
	1.1.1 – Speed.	
	1.1.2 – Accuracy	
	1.1.3 – Reliability	
	1.1.4 – Memory	
	Capabilities	
	1.1.5 – Repeatability	
	1.2 Types of Computers	01
	1.2.1 – Analog, Digital & Hybrid	
	1.2.2 – General & Special Purpose Computer	
	1.3 Computer Generations	02
	1.3.1 – Characteristics of Computer generation	
	1.3.2 – Computer Systems, Micros, Minis & Mainframes.	
	1.4 Computer Hardware & Software.	02
	1.4.1 – Block Diagram of Computer	
	1.4.2 – Different types of Software	
	1.5 Number System & Codes.	03
	1.5.1. – Decimal, Binary, Octal, Hexadecimal.	
	1.5.2. – Conversion from one System to other.	
	1.5.3. – Codes used –ASCII.	
	1.6 Data Processing	02
	1.6.1. – Data, Data Processing System.	
	1.6.2. – Processing & Storing Data.	
2.	COMPUTER DEVICES	04
	2.1. Introduction to Input Devices.	
	2.1.1. – Categorizing Input hardware.	
	2.1.2. – Key Board.	
	2.1.3. – Direct Entry – Card Readers, Scanning devices, Bar Code Readers, OCR, Character Scanners, Smart card.	
	2.1.4. – Voice Input Device.	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 103SCHEME: Dip. IT_September' 2000
NAME OF COURSE: INTRODUCTION TO P.C.

S. No.	Detailed Course Content	Hours of study
	2.1.5. – Pointing Device – Mouse, Light Pen. 2.1.6. – Touch Devices. 2.2. Storage Devices. 2.2.1. – Storage Fundamentals. 2.2.2. – Primary & Secondary Storage. 2.2.3. – Data Storage & Retrieval methods. Sequential, Direct & Indirect. 2.2.4. – Tape storage & Retrieval Methods, Tape storage Devices, Characteristics & limitations, Floppy & their types. 2.2.5. – Direct access Storage for microcomputer – Hard Disk, Disk Cartridges, Direct access Storage Device for large Computer systems. 2.2.6. – Mass Storage Device Optical Disk & CD Rom, DVD.	04
	2.3. Central Processing Unit. 2.3.1. – The Microprocessor, Control, Unit, ALU, Registers, Buses. 2.3.2. – Main memory, RAM, ROM, PROM, EPROM 2.3.3. – Measuring the Processing Power of a Computer, Data Bus, Capacity, Address Bus, Control Bus, Clock Speed, Assembly language & Machine Language.	02
	2.4. Out Put Devices. 2.4.1. – Devices 2.4.2. – Concept of Soft & Hard Copy Out Put Devices, Printers, Plotters, Computer Out Put Microfilm. 2.4.3. – Soft copy output Device, Cathode Ray tube, Flat Screen technologies. 2.4.4. – Voice output System. 2.4.5. – Video output Systems.	04

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 103

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: INTRODUCTION TO P.C.

S.No.	Detailed Course Content	Hours of study
3.	PERSONAL COMPUTERS	
	3.1. Introduction to PC.	04
	3.1.1. - Microcomputer uses	
	3.1.2. - Microcomputer in Office	
	3.1.3. - Limitation of Micro computer	
	3.1.4. - Desk top Personal Computer	
	3.1.5. - Types of PC Systems.	
	3.1.6. - Pentium Series PC's	
	3.2. Maintenance of PC	04
	3.2.1. - Typical Causes of System Failure.	
	3.2.2. - Component Failure.	
	3.2.3. - Temperature & Humidity	
	3.2.4. - Dust proof environment	
	3.2.5. - Noise Interference.	
	3.2.6. - Power Problem.	
	3.2.7. - Frequency Variation.	
	3.2.8. - Magnetic Fields.	
	3.2.9. - Corrosion	
	3.2.10. - Trouble shooting	
	3.3. Computer Viruses.	
	3.3.0 - Introduction to Anti viruses.	
	3.3.1. - Some Reported Viruses.	
	3.3.2. - Aborting Viral Attack	
	3.3.3. - What the Virus Does & How	
	3.3.4. - Idea of some Viruses	
	3.3.5. - Removal of Anti Viruses.	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
 COURSE CODE: 103

SCHEME: Dip. IT _September' 2000
 NAME OF COURSE: INTRODUCTION TO P.C.

S.No.	Detailed Course Content	Hours of study
4.	COMPUTER SOFTWARE	
	4.1. System Softwares	02
	4.1.1. – System Software V/s Application Software.	01
	4.1.2. – Types of System Software.	01
	4.1.3. – Introduction & Types of Operating System Programs, Booting loader, Diagnostic tests, Operating System Executive BIOS, Utility Programs, File Maintenance.	02
	4.1.4. – Language Processor, Assembler, Compiler and Interpreter.	02
	4.2. Application Software	02
	4.2.1. – Microcomputer software Inter acting with the system.	01
	4.2.2. – Trends in PC Software	01
	4.2.3. – Types of Application Software.	01
	4.2.4. – Difference between languages & Packages.	01
5	PROGRAMMING LANGUAGES.	
	5.1 Over view of Programming Languages.	01
	5.2 Development of programming languages, First, Second, Third, & Fourth generation.	02
	5.3 Classification of Programming Language.	01
	5.4 Application of programming Languages in Scientific, Business, Artificial Intelligence and system Programming.	02
	5.5 Advantages & Disadvantages of High level Languages.	01
	5.6 Programming Language Evaluation & Selection.	02
	5.7 Popular Programming languages.	01
	5.8 Fourth Generation Languages.	01
	5.9 Different commonly used Software Packages.	01

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST

COURSE CODE: 103

NAME OF COURSE: INTRODUCTION TO P.C.

SCHEME: Dip. IT _September' 2000

COMMON WITH PROGRAMME (S):

PAPER CODE: 5001

Practicals: 2 per week

LIST OF EXPERIMENTS

S.No.	Name of experiments	Hours of study
1.	Connection of various computer components like CPU, Keyboard, Mouse, Monitor, Printer and CVT. (Physical)	Total 32
2.	Installation of Dos and Windows 95 operating systems on PC. Study of procedure of installing various application softwares on windows.	
3.	Configuring monitor of PC, e.g. adjusting monitor resolution, monitor type, refresh rate, gamma setting etc.	
4.	Study of multimedia system; use of windows media player. Recording, editing playing sound and video files.	
5.	Prevention of computer from virus attack; installing antiviral software on PC, upgrading the vaccine from floppy / internet / CD.	
6.	Backup of data on tape, floppy & hard disk.	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 103

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5001

NAME OF COURSE: INTRODUCTION TO P.C.

REFERENCES

1. Inside the IBM PC, Norton Peter
2. Hardware Bible, BPB Publication
3. Computer Hardware, Osborne Series
4. IBM PC & Clones, Balaguruswamy, Tata McGraw Hill

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 104

NAME OF COURSE: P.C. UTILITIES & OPERATING
ENVIRONMENT

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S)
PAPER CODE: 5002

RATIONALE

Information technologist has to use P.C. in various situations in the world of work. This course aims at developing skills of using Personal Computer in most commonly used operating environment i.e. DOS, Windows & their utilities.

Knowledge & comprehension of the course content will enable student to use P.C. efficiently & effectively.

Treatment of the content should be through exercises on computer beginning from brisk commands to the advanced features of P.C. Utilities.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 104

NAME OF COURSE: P.C. UTILITIES & OPERATING ENVIRONMENT

SCHEME: Dip. IT, September' 2000
COMMON WITH PROGRAMME (S)
PAPER CODE: 5002

Lectures: 2 Hrs. per week

Practicals: 8 Hrs. per week

SCHEME OF STUDIES

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
1	Basics of Operating System	4	16	20
2	M.S. Disk Operating System	4	16	20
3	DOS Utilities	4	16	20
4	Additional features of DOS	4	16	20
5	Introduction to Windows	4	16	20
6	Working with Windows	4	16	20
7	Window Utilities	4	16	20
8	Sharing Information Between Programs	4	16	20
	Total	32	128	160

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
 COURSE CODE: 104
 NAME OF COURSE: P.C. UTILITIES & OPERATING ENVIRONMENT

SCHEME: Dip. IT_September' 2000
 COMMON WITH PROGRAMME (S)
 PAPER CODE: 5002

Lectures: 2 Hrs. per Week

S.No.	Detailed Course Content	Hours of study
1.	BASICS OF OPERATING SYSTEM	4
1.1	Functions	
1.2	Types	
1.2.1	Batch Systems	
1.2.2	Interaction Systems	
1.2.3	Multi Programming	
1.2.4	Time Sharing	
1.2.5	Multi Processing	
1.2.6	Multi Tasking	
2.	M.S. DISK OPERATING SYSTEM	4
2.1	Introduction, History and versions	
2.2	Fundamentals of Dos	
2.2.1	Physical structure of Disk	
2.2.2	Compatibility of Dries, Disk and Dos versions	
2.2.3	Preparing Disks for Use	
2.2.4	Device Names	
2.3.1	Booting Process	
2.3.2	System files and command.com	
2.4	Internal Dos commands – DIR, MD, CD, COPY, DEL, REM, VOL, DATE, TIME, CLS, PATH, TYPE.	
2.5	Files and Directories	
2.6	Elementary External Dos Commands – CHKDSK, MEM, X- COPY, PRINT, DISK COPY, DISKCOMP, DOSKEY, HELP, TREE, SYS, LABEL, ATTRIB.	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 104

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: P.C. UTILITIES & OPERATING ENVIRONMENT

Lectures: 2 Hrs. per Week

S.No.	Detailed Course Content	Hours of study
3	DOS UTILITIES	4
3.1	<u>Disk Utilities :</u> chkdsk, fdisk, formatting, scandisk, disk compression, retrieving deleted files, Unformat, fragmentation, Defragmentation utilities, Backup Utilities, partition, using fdisk, virus scanner.	
3.2	<u>Memory:</u> Mem maker Mem ; MSD	
3.3	<u>System:</u> System Information	
4.0	ADDITIONAL FEATURES OF DOS	4
4.1	Config.sys files	
4.2	Idea about ROM BIOS	
4.3	Different between .EXE, .COM, and .BAT files	
4.4	Creating Batch files	
4.5	Additional Commands – ECHO, PROMPT, MODE, GRAPHICS, EDIT, FORMAT, FDISK, BACKUP, RESTORE, MORE, SORT, APPEND.	
5.	INTRODUCTION TO WINDOWS	4
5.1	What is Windows Operating system?	
5.2	Introduction to Windows	
5.3	O.S.	
5.4	Getting acquainted with O.S.	
5.5	Files & Folder	
5.6	Handling function	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 104

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: P.C. UTILITIES & OPERATING ENVIRONMENT

Lectures: 2 Hrs. per Week

S.No.	Detailed Course Content	Hours of study
6.	WORKING WITH WINDOWS	4
6.1	Working with task bar utilities	
6.2	Using start menu	
6.3	Using the run command	
6.4	Using my computer window	
6.5	Control panel, Recycle bin,	
6.6	Add/remove programmes,	
6.7	Programme icons	
6.8	Installing applications	
6.9	Uninstallation procedure	
6.10	Searching files and folders.	
7.	WINDOWS UTILITIES	4
7.1	Internet explorer	
7.2	Multimedia media utility	
7.3	Sound recorder	
7.4	Media player	
7.5	System tools,	
7.6	Backup	
7.7	Compression agent	
7.8	Disk defragmentor,	
7.9	Scandisk,	
7.10	System agent	
7.11	System monitor	
7.12	Creation of start up disk.	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 104

SCHEME: Dip. IT _September' 2000
NAME OF COURSE: P.C. UTILITIES & OPERATING
ENVIRONMENT

Lectures: 2 Hrs. per Week

S.No.	Detailed Course Content	Hours of study
8	SHARING INFORMATION BETWEEN PROGRAMS	4
8.1	Understanding OLE	
8.2	Embed / Link Using cut and paste	
8.3	Embed / Link using insert object	
8.4	Manage Embedded / Linked object	
8.5	Importing & Exporting Documents	
8.6	Windows Accessories	
	Starting and Exiting an Accessory	
	Calculator	
	Character Map	
	Games	
	Multimedia	
	Paint	
	Phone Dialer	
	Word Pad	
	Control Panel and related function	

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 104
NAME OF COURSE: P.C. UTILITIES & OPERATING ENVIRONMENT
SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S)
PAPER CODE: 5002

LIST OF EXPERIMENTS

Practicals: 8 Hrs. per week

S.No.	Name of experiments	Hours of study
1.	Use of internal and external Dos Commands.	Total 128
2.	Making copies of lists, making system/rescue disk in Dos/Windows.	
3.	Study of control panel in windows.	
4.	Study of accessories in windows.	
5.	File management using explorer in windows	
6.	Use of internet and e-mail.	
7.	Use of search engines to find the required information.	
8.	Down load information from Web sites and WWW.	

The above list is suggestive, additional experiments may be added depending upon institutional facilities.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 104
NAME OF COURSE: P.C. UTILITIES & OPERATING ENVIRONMENT
SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S)
PAPER CODE: 5002

REFERENCES

1. Understanding windows, Chapman, BPB Publication.
2. Dos & Utilities, BPB Publication.
3. Learning windows in 24 hours, Sam Techmedia.

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DIPOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 105
NAME OF COURSE: PROFESSIONAL ACTIVITIES

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S)

Practice Hours: 2 Hrs/week

RATIONALE

Since **Professional Activities** is not a descriptive course, as per conventional norms, therefore specific content for this course can not be prescribed. It is a group of open-ended activities, where in variety of tasks are to be performed, to achieve objectives. However general guidelines for achieving the target and procedure for its assessment are given here under:

As the student has to practice this course in all the six semesters, the guidelines given below are common and applicable to each semester.

OBJECTIVES:

- To allow for professional development of students as per the demand of engineering profession.
- To provide time for organisation of student chapter activities of professional bodies (i.e. Institution of engineers, ISTE or Computer Society of India etc.)
- To allow for development of abilities in students for leadership and public speaking through organisation of student's seminar etc.
- To provide time for organisation of guest lectures by expert engineers/eminient professionals of industry.
- To provide time for organisation of technical quiz or group discussion or any other group activity.
- To provide time for visiting library or using Internet.
- To provide time for group discussion or solving case studies.
- To provide time for personality development of students.
- To provide time for working for a social cause like awareness for environment and ecology etc.

DETAILED INSTRUCTIONS TO CONDUCT 'PROFESSIONAL ACTIVITIES':

- A) Study hours, if possible should be given greater time slot with a minimum of two Hrs/week to a maximum of four Hrs/week.
- B) This course should be evaluated on the basis of GRADES & mark sheet of students, should have a separate mention of the grade awarded. There will be no pass/fail in Professional Activities (P.A.).

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C) Following grade scale for evaluation of performance in P.A. has been established.

<u>Grades</u>	<u>Level of performance</u>
A	Excellent
B	Good
C	Fair
D	Average
E	Below expectations

D) Grades once obtained in a particular examination shall become final and no chance for improvement in grades will be given to the students.

E) Assessment of performance in P.A. is to be done internally by the institution, twice in a semester/term through a simultaneous evaluation of the candidate by a group of three teachers, of the deptt. concerned. Group of teachers will jointly award the grade to candidate in the assessment. Best of the grades obtained by the student in these two assessment shall be finally taken on the mark sheet of the respective semester/term.

Candidates abstaining from the prescribed course work and/or assessment planned at the institution, shall be marked ABSENT in the mark sheet, instead of any grade.

F) While awarding the grades for performance in P.A., examining teacher should reach the final consensus based on the attendance, punctuality, interest, presentation skills in seminar on the topic assigned (Collection of relevant data, Observations, Analysis, findings/Conclusion) and its written report, awareness of latest developments in the chosen programme of study.

G) Institution shall maintain the record of grades awarded to all the students in P.A. for a period of one year.

H) It shall be mandatory for students to submit a compendium of his P.A. in the form of a journal.

I) Compendium shall contain following

- i) Record of written quiz.
- ii) Report/Write up of seminar presented.
- iii) Abstract of the guest lectures arranged in the institution.
- iv) Topic & outcome of the group discussions held.
- v) Reports on the problems solved through case studies.
- vi) Report on social awareness camps (organised for ecology & environment preservation).
- vii) Report on student chapter activities of professional bodies like ISTE, I.E. (India), CSI etc.

I) P.A. is not a descriptive course to be taught in the classroom by a particular teacher. Various activities involved in the achievement of objectives of this course should be distributed to number of teachers so that the talents and creativity of group of teachers' benefits the treatment of the course content.

Treatment of P.A. demands special efforts, attention, close- cooperation and creative instincts on the part of teachers of the dept. concerned. Since this course is totally learner centered, many of the activities planned under this course shall come out from the useful interaction of students,

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among themselves and with the teachers. The guiding teacher/s shall best act as a facilitator of these creative hunts/exercises, which unfold many of the hidden talents of the students or brings out greater amount of confidence in them, to execute certain activity.

CURRICULUM
FOR
DIPLOMA IN INFORMATION TECHNOLOGY
(SECOND SEMESTER)

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER SECOND
COURSE CODE: 20
NAME OF COURSE: APPLIED MATHS

SCHEME: Dip. IT_September 2000
IMPLEMENTED FROM SESSION 2000-2001
UNDER SEMESTER SYSTEM

RATIONALE

The diploma is for students who are interested in the field of information technology. It is designed to provide the students with the necessary skills and knowledge to work in the field of information technology. The course is designed to be flexible and to allow students to choose their own path of study. The course is designed to be practical and to provide students with the necessary skills and knowledge to work in the field of information technology.

CURRICULUM FOR DIPLOMA IN INFORMATION TECHNOLOGY

(SECOND SEMESTER)

Scheme: Dip. IT_September 2000
Implemented from session 2000-2001
Under semester system

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 201
NAME OF COURSE: APPLIED MATHS

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S):
M05, E03, C04 & I02
PAPER CODE: 0010

RATIONALE

Mathematics is the backbone of all areas of technology 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 first year, the admission level to polytechnics has been considered as 10th Board Examination, and mathematical needs of technical subjects have been given due importance. Integration of teaching of mathematics with technical subject is essential. Therefore as far as possible problems of practical and applied nature have been included in the teaching of mathematics.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 201
NAME OF COURSE: APPLIED MATHS

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S):
M05, E03, C04 & I02
PAPER CODE: 0010

SCHEME OF STUDIES

Lectures: 4 Hrs. per week
Practical: -- Hrs. per week

S. No.	TOPIC	CONTACT HOURS PER WEEK		
		THEORY	PRACTICAL	TOTAL
1.	Algebra	09	-	09
2.	Trigonometry	11	-	11
3.	Coordinate Geometry	20	-	20
4.	Differential Calculus	10	-	10
5.	Vector Algebra	11	-	11
6.	Introduction to Integral Calculus	03	-	03
	Total	64	Nil	64

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 201
NAME OF COURSE: APPLIED MATHS

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
M05, E03, C04 & I02
PAPER CODE: 0010

Lectures: 4 Hrs. per week

SPECIFICATION TABLE

S. NO.	TOPIC	LECT. HOURS.	MARKS ALLOTTED (Approximately)
1.	Algebra	09	13
2.	Trigonometry	11	18
3.	Coordinate Geometry	20	30
4.	Differential Calculus	10	15
5.	Vector Algebra	11	19
6.	Introduction to Integral Calculus	03	05
	Total	64	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 201
NAME OF COURSE: APPLIED MATHS

SCHEME: Dip. IT, September' 2000
COMMON WITH PROGRAMME (S):
M05, E03, C04 & I02
PAPER CODE: 0010

Lectures: 4 Hrs. per week

S. NO	TOPIC	SUB.-TOPICS	CONTENT DETAILS
1.	ALGEBRA	Determinants Mean & RMS Value. Quadratic equation	Concept and principles of determinants. Properties of determinants. Computation of mean & RMS Value. General equation of second degree, Nature of roots, Formation of equation.
2.	TRIGONOMETRY	Trigonometrical ratios of multiple and sub-multiple angles. Trigonometrical equations	Half angles, double angles, triple angles. General solution of Trigonometrical equations.
3.	COORDINATE GEOMETRY	Coordinate systems Distance, Division. Standard forms of the equation of a straight line Change of axes Circle Conic Sections	Cartesian and polar coordinates. Distance between two points, Division of a line segment. Locus, Standard forms, General equation of a straight line and its reduction to structural forms. Straight line through one and two points. Transformations of coordinates when the origin is shifted or axes are rotated. Definition, Standard forms, General equation, Centre and Radius. Parabola, Ellipse
4.	DIFFERENTIAL CALCULUS.	Functions Limit Differentiation by first principle	Independent and dependent variables, different types of function. Concept of limit and its evaluation. Differentiation by first principle of Algebraic, Trigonometrical, exponential and logarithmic function.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 201

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: APPLIED MATH

Lectures: 4 Hrs. per week

S. N O.	TOPIC	SUB.-TOPICS	CONTENT DETAILS
5.	VECTOR ALGEBRA	Methods of differentiation. Introduction of Vector Addition of Vector Component of Vectors Multiplication of Vectors	Differentiation of sum, product and quotient of two functions and function of a function. Concept of vector and scalar quantities. Understand the principles of addition, subtraction of vectors. Component of vectors, standard unit Vector J, K. Scalar product and its applications, Vector product and its applications.
6.	INTRODUCTION TO INTEGRAL CALCULUS.	Integration	Definition of Integration and Fundamental properties of Integration.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 201

NAME OF COURSE: APPLIED MATHS

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S):
M05, E03, C04 & I02
PAPER CODE: 0010

REFERENCES

1. Mathematics for Polytechnic volume I, TTTI publication.
2. Applied Mathematics, PBS Publication, Bhopal.
3. Applied Mathematics, Deepak Prakashan, Gwalior.
4. Differential Calculus, Gorakh Prasad.
5. Integral Calculus, Gorakh Prasad.
6. Coordinate Geometry, S. L. Loney.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 202

NAME OF COURSE: OFFICE AUTOMATION

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5003

RATIONALE

The contents of this course have been developed keeping in view the modern office management practices being exercised in present IT revolution. All modern office software packages used in offices have been included in the course. Inclusion of presentation techniques will make the contents rich in features. After studying this course the student should be able to:

1. Make project report
2. Present report
3. Create balance sheet
4. Draft business, personal and technical letters.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 202

SCHEME: Dip. IT, September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5003

NAME OF COURSE: OFFICE AUTOMATION.

Lectures: 2 Hrs. per week
Practical: 6 Hrs. per week

SCHEME OF STUDIES

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		Total
		Theory	Practical	
1	Introduction	4	12	16
2	Basics of Word Processing	5	14	19
3	Enhancing the document	5	14	19
4	Spread Sheet	5	14	19
5	Working with formulae and calculation	5	14	19
6	Creative and editing charts	4	14	18
7	Presentations	4	14	18
	Total	32	96	128

19/80

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
(M. P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 202
NAME OF COURSE: OFFICE AUTOMATION

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5003

Lectures: 2 Hrs. per Week

S. No.	Detailed Course Content	Hours of study
1.	INTRODUCTION Role of office automation, modern office environment, Manpower, Furniture, Computers, Equipments, Office automation Software; Word processors, spreadsheets and Presentation Softwares.	4
2.	BASICS OF WORD PROCESSING Selection of text, creating documents, cursor control, Printing documents, Print Setup, Print Preview, Page setup, Editing the text (copy, delete, cut, move, paste etc). Finding text, spell check, Grammar checks facility, font size and type.	5
3.	ENHANCING THE DOCUMENT Borders, Headers, Footers, Inserting objects (images, text, drawing & symbols), setting up tables with multiple columns and rows. Table Characteristics, Margins, Placements, Style, Boundaries, Auto sum feature, Merging document, Creating tables, graphics and using templets. Word Processing under DOS.	5
4.	SPREADSHEET Data entry cells, Entry of text, formulae, numbers; moving, deleting, copying, editing data in a worksheet selecting data range. Applying formulae to select range. Tool Bars, Menus, Cell refreshing saving & quitting.	5
5.	WORKING WITH FORMULAE AND CALCULATIONS Efficient data display with data formatting (Number formatting, Date formatting, Currency formatting etc.). Using auto fill in worksheets, Working with ranges, worksheet printing, Print Preview, Print set up Page setup.	5

19/81

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 202

SCHEME: Dip. IT _September' 2000
NAME OF COURSE: OFFICE AUTOMATION

Lectures: 2 Hrs. per Week

S. No.	Detailed Course Content	Hours of study
6.	CREATING AND EDITING CHARTS Creating embedded chart using chart wizard. Updating/editing charts; bar charts, histogram pie charts etc. changing chart types Adding titles, legends and guidelines, printing charts.	4
7.	PRESENTATIONS Basic presentation creation, Adding objects, applying transition, animation effects and linking. Modifying visual elements. Printing handouts.	4

19/82

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 202

NAME OF COURSE: OFFICE AUTOMATION

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S)
PAPER CODE: 5003

LIST OF EXPERIMENTS

Practical: 6 Hrs. per Week

S. No.	Name of experiments	Hours of study
1	Drafting letters in professional, business and corporate styles.	35
2	Preparing balance sheets in different styles.	38
3.	Making project reports using tables & graphs.	37
4	Preparing multimedia in presentation using Power point ®, Lotus freelance graphics ®	18
		128

19/83

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND

COURSE CODE: 202

NAME OF COURSE: OFFICE AUTOMATION

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5003

REFERENCES

- (1) Microsoft Office 97, Gin Conrter & Aunette Marquis, BPB Publication.
- (2) Excel for windows, Prince, (1999), Galgotia.
- (3) Essential guide; Word for Windows, Eckols. (1999), Galgotia.

15/84

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 203

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5004

NAME OF COURSE: COMPUTER ORGANISATION

RATIONALE

SCHEME OF STUDIES

Diploma holders in Information Technology have to be conversant with computer, its terminology & functioning. The course content gradually leads students to computer architectural aspects. Course aims at acquainting the students with the content through, demonstration & exercises to be performed.

19/85

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 203

NAME OF COURSE: COMPUTER ORGANISATION

Lectures: 3 Hrs. per week
Practical: 2 per week

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5004

SCHEME OF STUDIES

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
1	Number System	04	00	04
2	Boolean Algebra	08	18	26
3	Combination Logic Circuits	08	06	14
4	Sequential Circuits.	12	04	16
5	Basic Computer Organisation & Design	06	00	06
6	Micro processors	04	04	08
7	Parallel Processing	06	00	06
	Total	48	32	80

19/86

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND

COURSE CODE: 203

NAME OF COURSE: COMPUTER ORGANISATION

SCHEME: Dip. IT_September' 2000

COMMON WITH PROGRAMME (S):

PAPER CODE: 5004

Lectures: 3 Hrs. per Week

S. No.	Detailed Course Content	Hours of study
1	NUMBER SYSTEM Review of number systems & conversion 1's & 2's complements of Binary Numbers. Addition, Subtraction & Multiplication of Numbers. Gray Code, Excess-3 code subtraction using complements.	04
2.	BOOLEAN ALGEBRA Boolean operations, representation of Boolean operations logic gates, NOT, AND, OR, NAND, NOR, XOR. Rules/laws of Boolean Algebra, Cumulative law, Associative Law, Distributive law, Boolean expression, SOP & POS forms. Simplification of Boolean expression using Karnaugh map up to 4 variables.	08
3.	COMBINATION LOGIC CIRCUITS The universal properties of NAND & NOR gates. Half adder, full adder, Binary Adder, binary Adder-Subtractor, Binary Incrementer, Arithmetic circuits. Decoders, BCD to decimal, BCD to Seven segment Decoder, Encoders, Decimal to BCD Encoder. Multiplexers & Demultiplexers (Introduction only)	08
4.	SEQUENTIAL CIRCUITS Introduction, Flip-flops, Basic flip-flop, Clocked RS- flip-flop, D flip-flop, JK flip-flop, Master – slave flip-flop. Registers, Types of Registers (Introduction only) Concepts of counters.	12

19/87

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 203

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: COMPUTER ORGANISATION

Lectures:3 Hrs. per Week

S. No.	Detailed Course Content	Hours of study
5.	BASIC COMPUTER ORGANISATION & DESIGN Instruction codes, stored program organization, Direct Address or Indirect Address, common bus system, Instruction cycle, phases of instruction cycle, fetch, decode & execute. Computer instructions : Memory-reference instruction, register – reference instruction & Input – Output instruction.	06
6.	MICROPROCESSOR Introduction, function, Importance, structure of microprocessor. Architecture & operations. Overview of trends in microprocessor Technology (main features and comparisons) 8 bit, 16 bit, 32 bit Microprocessor chips, General idea of use of Microprocessor in control. Basic idea about designing simple board microcomputer	04
7.	PARALLEL PROCESSING Uni programming & Multi programming systems. (Introduction only) Multi processing, Pipelining, vector and Matrix Processing.	06

13/88

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 203
NAME OF COURSE: COMPUTER ORGANISATION

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME(S)
PAPER CODE: 5004

LIST OF EXPERIMENTS

Practical: 2 Hrs. per Week

S. No.	Name of the experiments	Hours of study
1	Design a circuit for Basic Logic gates like AND, OR, NOT.	06
2	Design a circuit for NAND & NOR gates.	06
3	Proof Distributive, Cumulative, Associative law with the help of circuit.	06
4	Design half – adder, full - adder & Binary adder – subtractor.	06
5	Implement a microprocessor operations in a lab.	04
6	Design a basic flip-flop.	04

19/89

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DIPLOMA IN INFORMATION TECHNOLOGY

R : SECOND
CODE: 203
COURSE: COMPUTER ORGANISATION

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S)
PAPER CODE: 5004

REFERENCES

MAIN READING :-

- Computer system Architecture, M. Moris Mano, Prentice Hall.
- Microprocessor fundamentals, B. Ram.

SUPPLEMENTARY READING :-

- Computer Architecture and Organization, McGraw Hill
- Introduction to Microprocessor, A. P. Mathur, Tata McGraw Hill
- Digital Electronics, Malvino & Leatch,
- Digital Electronics, Gaur.

19/90

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER : SECOND

COURSE CODE: 204

NAME OF COURSE: BASIC PROGRAMMING IN 'C'

SCHEME: Dip. IT _September' 2000

COMMON WITH PROGRAMME(S)

PAPER CODE: 5005

RATIONALE

Since the development of computer programming languages, many languages have come and become defunct Nowadays, it is 'C' and its upgraded version like C++ which are most popular and commonly used for programming. C is a general purpose and relatively low programming language with features of expression, modern control flow and data structures. The 'C' language has been used to write operating system like UNIX.

To give understanding of concepts of programming, algorithms and use of C programming language, this course has been kept in second semester.

A course having more advance features of 'C' has been kept in third semester.

19/91

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 204

NAME OF COURSE: BASIC PROGRAMMING IN 'C'

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S)
PAPER CODE: 5005

Lectures: 4 Hrs. per Week
Practical: 6 Hrs. per week

SCHEME OF STUDIES

S. NO.	TOPIC	SCHEME OF STUDIES		
		Theory	Practical	Total
1	Program Development	8	-	08
2	The Function of Turbo C editor	2	-	02
3	Overview of C Language	4	-	04
4	Operator & Expressions	10	08	18
5	Decision Making, Branching & Looping	14	26	40
6	Array	6	10	16
7	Function	12	36	38
8	Basic concept of structure, union, pointer and files.	8	16	24
	Total	64	96	160

13/92

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND

COURSE CODE: 204

NAME OF COURSE: BASIC PROGRAMMING IN 'C'

SCHEME: Dip. IT_September' 2000

COMMON WITH PROGRAMME(S)

PAPER CODE: 5005

Lectures: 4 Hrs. per Week

S. No.	Detailed Course Content	Hours of study
1.	<p>PROGRAM DEVELOPMENT</p> <p>History of 'C' Languages Steps in Program Development, Algorithm, Flowcharts, Flowcharts symbols, Advantages & Disadvantages of flow chart, Some examples of Flowcharts, Pseudocode, Characteristics of Good Program, Error diagnostics, Logical debugging.</p>	08
2.	<p>THE FUNCTION OF TURBO 'C' EDITOR</p> <p>File menu, Edit menu, Run menu, Compile menu, Debug menu, and Watch/Break menu, Procedure for editing, Compiling, Linking/running, Making exe of programs and debugging programs in TC, Trace.</p>	02
3.	<p>OVERVIEW OF C LANGUAGE</p> <p>The function of main, Pre Processor directives, comment, C character set, identifiers and keywords. Constants, Variables, Data Types –Integer variable, short, long, unsigned, signed, float, double, Character, string their declaration syntax, constant-hexadecimal, Decimal, Octal., ASCII character set.</p>	04
4.	<p>OPERATOR & EXPRESSIONS</p> <p>Arithmetic's, Relational, Equality, Logical connectives, Unary and Ternary operators , Arithmetic's Expressions & their evaluation</p> <p>LIBRARY FUNCTIONS</p> <p>Ceil, floor, exp, log, pow, fmod, getchar, putchar, abs, fabs, rand, srand, toupper, tolower, toascii.</p> <p>FORMATTING INPUT OUTPUT</p> <p>scanf, printf, gets, printf, puts, putchar, different formatting symbols and their meaning.</p>	10
5.	<p>DECISION MAKING, BRANCHING & LOOPING</p> <p>if else statement, nested if, switch statement, its comparison, continue, break, default, exit, goto statement, comma operator, for loop, while loop, do while loop, nested looping.</p>	14

19/93

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 204
Lectures: 4 Hrs. per Week

SCHEME: Dip. IT_September' 2000
NAME OF COURSE: BASIC PROGRAMMING IN 'C'

S. No.	Detailed Course Content	Hours of study
6.	ARRAY Defining an array, Initializing arrays, one & two-dimensional array, processing an array reading and writing string, string based library function.	06
7.	FUNCTION Concept, principal and objective of structured programming language, Top-down & Bottom-up designing, defining a Function, Accessing a Function, Passing Arguments to a Function, The scope and life of variable – actual, formal, local and global parameter, passing array as parameter to a function, Recursion, call by value, call by reference, storage classes – static, auto, extern, register.	12
8.	BASIC CONCEPT OF STRUCTURE, UNION, POINTER AND FILES	08

19/34

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND

COURSE CODE: 204

NAME OF COURSE: BASIC PROGRAMMING IN 'C'

SCHEME: Dip. IT_September' 2000

COMMON WITH PROGRAMME (S):

PAPER CODE: 5005

LIST OF EXPERIMENTS

Practical: 6 Hrs. per week

S. No.	Name of experiments	Hours of study
1.	Program related to Library function & formatted I/O	08
2.	Program related to Conditional Statement	08
3.	Program related to Looping Statement	10
4.	Program using Switch Statement	04
5.	Program using Continue, Break, Exit.	04
6.	Program using Single dimensional and Two-dimensional array.	10
7.	Program using Function.	18
8.	Program using call by Value & Call by reference	04
9.	Program to Pass array as argument to a function.	02
10.	Program using Static, Auto, & Extern function.	12
11.	Program using Structure & Union.	12
12.	Program using Pointer & Files.	04
Total		96

19/95

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 204

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME(S):
PAPER CODE: 5005

NAME OF COURSE: BASIC PROGRAMMING IN 'C'

REFERENCES

1. Theory and problems of programming with 'C', Gottfried., Schaum's series.
2. Programming in C, Balaguruswami.
3. Let us "C" , Y. Kanetker.

19/96

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 205
NAME OF COURSE: BASIC ELECTRICAL, ELECTRONICS & MEASUREMENTS
SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5006

RATIONALE

Electricity finds its base as basic energy for modern industrial activities and so is the case of Electronics which is being extensively used today, in all Industries, Power System Operation, Communication Systems, Computers and information Technology. Hence it has become absolutely necessary for all Diploma Holders to have basic understanding of:-

- (a) Basic Laws of electricity & magnetism.
- (b) Power in A.C. Circuit.
- (c) Electronic Components, their functions & applications.
- (d) Measurements & Control etc.

This will form the base for handling various types of Equipments used in I.T. Industry and will facilitate in operation & maintenance of equipments to carry out his/her job functions effectively.

The practical work to be performed in this course will help in developing skills of operation, repairs and testing of components, and various gadgets.

19/97

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND

COURSE CODE: 205

NAME OF COURSE: BASIC ELECTRICAL, ELECTRONICS
& MEASUREMENTS

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):

SCHEME OF STUDIES

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		Total
		Theory	Practical	
1	Review of General Topics	06	-	06
2	Electromagnetism	06	06	12
3	A.C. Theory	06	-	06
4	General Electrical Machines	06	08	14
5	Introduction to Electronics.	02	-	02
6	Semi Conductor Physics	06	-	06
7	Semi Conductor Diodes	06	04	10
8	Transistors	06	04	10
9	Regulated Power Supply	04	04	08
10	Measuring Instruments	06	06	12
	Tutorials	4+6	-	10
	Total	64	32	96

13/98

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND

COURSE CODE: 205

NAME OF COURSE: BASIC ELECTRICAL, ELECTRONICS
 & MEASUREMENTS

SCHEME: Dip. IT_September' 2000
 COMMON WITH PROGRAMME (S):

Lectures: 4 Hrs. per week

S. No.	Detailed Course Contents	Hours of study
1.0	REVIEW OF FOLLOWING	6
1.1	Atomic Structure of Conducting and Semi-Conducting materials.	
1.2	Behavior of materials with electricity.	
1.3	Concept of unit of Electric current and Voltage	
1.4	Ohm's Law, Concept of Resistance, Conductance, Resistivity and Conductivity. Their units and dependence on temperature.	
1.5	Power & Energy, heating effect of electric current and conversion of units (Mechanical to Electrical)	
1.6	Kirchoff's Voltage and current Laws & their applications in simple DC Circuits.	
1.7	Series & Parallel combination of resistance and wattage, Consideration with Simple Problems.	
2.0	ELECTROMAGNETISM	6
2.1	Concept of magnetic field production by flow of current, concept of m m f, flux, reluctance, permeability, Analogy between electrical & magnetic circuits.	
2.2	Faraday's Laws of electromagnetic induction, self and mutually induced e m fs, simple numerical problems.	
3.0	A.C. THEORY	6
3.1	Concept of alternating voltage and current, difference between AC and DC.	
3.2	Concept of cycle, frequency, period, amplitude, instantaneous value, average value, r.m.s. value and peak value, form factor (definitions only.)	
3.3	Concept of impedance, phase angle, numerical problems, RL & RLC series circuits.	
4.0	GENERAL ELECTRICAL MACHINES	6
4.1	Introduction, definition of motor & generator and common features of static & rotating electrical machines.	
4.2	Transformer- Construction- core type, shell type, transformation ratio and e.m.f. equation.	

19/99

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
 COURSE CODE: 205

SCHEME: Dip. IT_September' 2000
 NAME OF COURSE: BASIC ELECTRICAL, ELECTRONICS
 & MEASUREMENTS

Lectures: 4 Hrs. per week

S. No.	Detailed Course Contents	Hours of study
5.0	INTRODUCTION TO ELECTRONICS	2
5.1	Voltage and current sources, Constant voltage and current sources and their graphical representation. Conversion of voltage source into current source and vice-versa.	
6.0	SEMI-CONDUCTOR PHYSICS.	6
6.1	Conducting materials, effect of temperature conductivity in Germanium and Silicon.	
6.2	Extrinsic Semi-Conductors, doping, P-N type Semi-Conductor, majority and minority carriers, effects of temperature.	
6.3	P-N junction, drift and diffusion currents, depletion layer, potential barrier, effects of forward and reverse biasing of P-N junction. Energy band diagrams, breakdown mechanism.	
7.0	SEMI CONDUCTOR DIODES.	6
7.1	Use of diode as half wave and full wave (Centre tapped and bridge type) rectifiers. Relation between d.c. output and a.c. input voltage.	
7.2	Concept of ripples, filter circuits, Shunt capacitor, Series inductor & ' ' filters and their applications.	
7.3	Zener-diode and its V-I Characteristics.	
8.0	TRANSISTORS.	6
	Construction of bi-polar junction transistor with respect to :-	
8.1	Working-principle of transistor, forward and reverse biasing.	
8.2	Transistor Configuration-Common Base (CB), Common Emitter (CE) and Common Collector (CC), their Comparison of configuration and applications. General introduction of UJT, FET and SCR.	
9.0	REGULATED POWER SUPPLY.	4
9.1	Need of regulated power supply, regulation, stabilisation of voltage by Zener-diode, its limitations.	
9.2	Block diagram of regulated power supply, transistorised regulated power supply and short circuit protection.	

19/100

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 205

SCHEME: Dip. IT _September' 2000
NAME OF COURSE: BASIC ELECTRICAL, ELECTRONICS
& MEASUREMENTS

Lectures: 4 Hrs. per week

S. No.	Detailed Course Contents	Hours of study
10.0	ELECTRICAL & ELECTRONIC MEASUREMENT.	6
10.1	Working principle and Construction of Ammeters and Voltmeter, difference between them, extension of range and simple numerical problems.	
10.2	Principle and working of Watt meter (dynamometer type) and Energy meter (Induction type)	
10.3	Digital measuring instruments, Seven-segment display and its applications	

19/101

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 205

NAME OF COURSE: BASIC ELECTRICAL, ELECTRONICS
& MEASUREMENTS

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5006

LIST OF EXPERIMENTS

Practical: 2 Hrs. per week

S. No.	Name of experiments	Hours of study
1.	Verification of Ohm's law.	Total 32 Hrs.
2.	Verification of Kirchoff's laws.	
3.	To find out the value of capacitance of corrector.	
4.	Plotting V-I characteristics of semi-conductor diode.	
5.	Plotting V-I characteristics of Zener diode and finding it's reverse breakdown voltage.	
6.	Observation of output wave shapes and input wave shapes of Full wave/Half wave rectifier.	
7.	Plotting input/output characteristics of CE configuration of transistor.	
8.	To measure voltage, current, power and energy in single phase AC circuit.	
9.	Colour coding of resistance and units of capacitance.	

19/102

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: SECOND
COURSE CODE: 205

NAME OF COURSE: BASIC ELECTRICAL, ELECTRONICS
& MEASUREMENTS

SCHEME: Dip. IT September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: 5006

REFERENCES

1. Electrical Technology, E. Admiralty.
2. Electrical Engineering Basic Technology, Hubscher, Klaue Pfloger, Appelt, Willey Eastern Ltd., New Delhi.
3. Electrical Engineering, Gupta J.B.
4. Experiments in Basic Electrical Engineering, Bhattacharya S. K., Rastogi K. M., New Age International Pvt. Ltd., New Delhi.
5. Problems in Electrical Engineering, Smith P.

19/103

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: FIRST
COURSE CODE: 206

NAME OF COURSE: PROFESSIONAL ACTIVITIES

Practice Hours: 2 Hrs/week

SCHEME: Dip. IT _September' 2000
COMMON WITH PROGRAMME (S):

RATIONALE

Since **Professional Activities** is not a descriptive course, as per conventional norms, therefore specific content for this course can not be prescribed. It is a group of open-ended activities; where in variety of tasks are to be performed, to achieve objectives. However general guidelines for achieving the target and procedure for its assessment are given under the course content of course code 106 of first semester.

As the student has to practice this course in all the six semesters, the guidelines given therein are common and applicable to each semester.