CURRICULUM

FOR

DIPLOMA IN INFORMATION TECHNOLOGY

(FIFTH AND SIXTH SEMESTER)

JULY 2002

CURRICULUM DEVELOPMENT CENTRE,
RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA,
Office Complex, Block-A/IV, Gautam Nagar, Bhopal - 462-023
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राजीव गांधी प्रौद्योगिकी विश्वविद्यालय

(मध्यप्रदेश का तकनीकी विश्वविद्यालय)

पॉलीटेक्निक शाखा, पूर्व म.प्र. तकनीकी शिक्षा मण्डल

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA

(University of Technology of Madhya Pradesh)

Polytechnic Wing, Formerly M.P. Board of Technical Education

Ref. :रागप्रौवि/सीडीसी/02/ 1253 Date : 11.7.02.

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प्रति,

SPEED POST

प्राचार्य,
स.व.पोली. भोपाल/दुर्ग पोली. दुर्ग/ग्वालियर पोली. ग्वालियर/
कलानिकेतन पोली. जबलपुर/उज्जैन पोली. उज्जैन/एस. ए. टी. आई.
पोली. विदिशा/धार पोली. धार/शास.महिला पोली. भोपाल/
सहोदरा राय शा.महिला पोली. सागर/रायपुर महिला पोली.
रायपुर/शास.महिला पोली. बुरहानपुर/शास.महिला पोली.
जगदलपुर/शास. महिला पोली. खरगौन/शास.महिला पोली.
ग्वालियर.

विषय:- सूचना प्रौद्योगिकी कार्यक्रम के पांचवे एवं छठवे सेमेस्टर की पाठ्यचर्या को शैक्षणिक संस्थाओं में जुलाई 2002 से लागू करने बाबत ।

× × ×

पाठ्यक्रम समिति की अनुशंसाओं का माननीय कुलपति महोदय एवं अध्यक्ष, शैक्षणिक परिषद से अनुमोदन उपरांत विश्वविद्यालय द्वारा त्रिवर्षीय सूचना प्रौद्योगिकी पत्रोपाधि कार्यक्रम के पांचवे एवं छठवे सेमेस्टर की संशोधित पढ़ाई एवं परीक्षा योजना तथा उसकी नवीन विकसित पाठ्यचर्या (DIP.IT-SEPT.2002) को शैक्षणिक सत्र जुलाई 2002-2003 से लागू करने हेतु निर्देशित किया जा रहा है ।

कृपया पाठ्यचर्या एवं प.प.योजना की प्राप्ति की पावती इस विश्वविद्यालय को तत्काल पत्र से या फैक्स पर सूचित करें ।

संलग्न - उपरोक्तानुसार (पाठ्यचर्या की एक प्रति, मय पढाई एवं परीक्षा योजना के)

11/7/2002
सचिव,
राजीव गांधी प्रौद्योगिकी विश्वविद्यालय,
भोपाल

क्रमशः 2

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CURRICULUM

FOR

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(FIFTH AND SIXTH SEMESTER)

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FOREWORD

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 one decade. 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 maintain the supply of human resource capable of meeting the needs of the knowledge intensive IT industry 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 realize 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, 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 organizations.

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 promote self – study and seminars so as to provide professional orientation to the students.

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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 acknowledgement 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 university specially that of Shri S.K. Jain, Secretary, Shri Shamim Uddin, Coordinator, Shri K.C. Mahajan, Controller (Exam), Shri T.R. Arora, Deputy Secretary, 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 Proudyogiki Vishwavidyalaya

Bhopal
21-06-2002

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ACKNOWLEDGEMENTS

A joint curriculum innovation workshop was organised from 19th to 23rd March 2002 at Rajiv Gandhi Proudyogiki Vishwavidyalaya (Gautam Nagar office), Bhopal to prepare the course contents of V and VI semester courses for Diploma programme in Information Technology and to revise curriculum of Post Diploma in Computer Applications. Participants and experts for curriculum innovation workshop were drawn from polytechnics, industries and higher institutions. This document is an outcome of the joint endeavor of participants and experts during the workshop.

We are highly thankful to Honorable Shri Raja Pateriaji, Minister, Technical Education and Manpower Planning Deptt., Government of Madhya Pradesh, who made it convenient to inaugurate the workshop and enlighten the participants and officers of University for developing a professional curriculum. We are also grateful to Prof. P.B. Sharma, Vice-chancellor, RGPV, Bhopal for his wholehearted support, guidance and encouragement to complete this task. Many other persons, within and from outside of the system, who directly/indirectly assisted in oraganisation of the workshop also deserve special thanks as without their cooperation it would not have been possible to make the workshop a success.

Thanks are also due to industries and other organisation namely BHEL, OPTEL, BSNL and MACT, Bhopal, who sent their experts for the workshop and helped us to develop a need-based curriculum. We would also like to individually acknowledge the contribution of experts from industries like Ms. Deepa Prabhakar of BHEL, Mr. Subhash Mishra of OPTEL, Mr. Lovit Ravtani of MACT, faculty of various polytechnics made wholehearted efforts to prepare a professionally sound curriculum, which takes care of all the stakeholders of the system. Special thanks are due to, Shri Navneet Choudhury, System Analyst, Shri Sukhlal, Lecturer and Shri Deepak Tomar, Programmer for thoroughly screening the draft curriculum and suggesting changes and modifications, wherever required. We are grateful to Prof. N P Tiwari of TTTI, Bhopal for his valuable comments on 'Business Communication' course.

No work of this nature is possible without the support and co-operation of office staff. We would like to thank them all.

SHAMIM UDDIN
CO-ORDINATOR, CDC

S K JAIN
SECRETARY

Dated: 21st June 2002
Place: Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal

PARTICIPANTS IN THIRD CURRICULUM INNOVATION WORKSHOP

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INDUSTRIES AND HIGHER INSTITUTIONS:

1. Smt. Rachna Sigh, Divisional Engineer (CTTC),
   B S N L, Bhopal.
2. Ms. Deepa Prabhakar, Senior Engineer (EDP),
   Informatics Centre, BHEL, Bhopal.
3. Shri Subhash Mishra, Deputy Manager,
   Optel Telecommunications Ltd., Bhopal.
4. Shri Sanjay Kerhalkar, Deputy Manager,
   Optel Telecommunications Ltd., Bhopal.
5. Shri Lovit Rawtani, Lecturer,
   Maulna Azad College of Technology, Bhopal.
6. Shri Abhay Gupta, Sub Divisional Engineer (CTTC),
   B S N L, Bhopal.
7. Shri Prakash Vijayvargiya, Programmer,
   Rajiv Gandhi Proudyogiki Vishawavidyalaya, Bhopal.

POLYTECHNIC FACULTY:

1. Shri Navneet Choudhury, Sysytem Analyst,
   Shri Vaishnav Polytechnic, Indore.
2. Shri Sukhlal, Lecturer,
   S V Polytechnic, Bhopal.
3. Shri Jitendra Agrawal, Lecturer,
   I/c I. T. Deptt.,
   SATI (Poly), Vidisha.
4. Shri Sanjeev Mathur, Programmer,
   SATI (Poly), Vidisha.
5. Shri Deepak Singh Tomar, Programmer
   Govt. Women Polytechnic, Bhopal.
6. Shri Anil Mishra, Programmer,
   Govt. Polytechnic, Ashoknagar.
7. Shri N K Sahu, Programmer,
   Kalaniketan Polytechnic, Jabalpur.
8. Shri Asheesh Sharma, Programmer,
   Ujjain Polytechnic, Ujjain.
9. Shri S S Mukati, Programmer,
   Govt. Women Polytechnic, Khargone.

10. Shri Vivek Kumar Vaidya, Programmer,
    Govt. Women Polytechnic, Burhanpur.
11. Shri Pankaj Khare, Programmer,
    Govt. Polytechnic, Khurai.
12. Smt. Kaveeta Nagar, Programmer,
    Govt. Women Polytechnic, Indore.

POLYTECHNIC FACULTY FOR MISCELLENEOUS COURSES:

For course on Business Communication

1. Dr Laxminarayan Reddy, Lecturer, MOM,
   Govt. Women Polytechnic, Bhopal.
2. Shri Rajesh Tripathi, Lecturer, English,
   S V Polytechnic, Bhopal.
3. Dr Swati Shrivastava, Lecturer, English,
   Govt. Women Polytechnic, Bhopal.

Coordinator of the workshop

SHAMIM UDDIN, Coordinator,

Co-Coordinator of the workshop

T R ARORA, Deputy Secretary,

CURRICULUM DEVELOPMENT CENTRE,
RAJIV GANDHI PROUDYOGIKI VISHAWAVIDYALAYA, BHOPAL

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

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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 topnotch 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 form 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.

ORGANISATION OF VARIOUS COURSES IN DIPLOMA IN INFORMATION TECHNOLOGY PROGRAMME

S.No.	COURSE CODES	NAME OF COURSES WITH PAPER CODES	SEMESTERS						REMARKS
			I	II	III	IV	V	VI	
GENERAL STUDIES:									
1.	101	COMMUNICATION SKILL (0014)	•						
2.	105, 206, 306, 407, 506, 606	PROFESSIONAL ACTIVITIES	•	•	•	•	•	•	
3.	406	ELECTIVE-II (SELECT ONE) ENVIRONMENTAL ENGG. .(0262), MARKETING MANAGEMENT (0269) ENTREPRENEURSHIP (0271), OFFICE MANAGEMENT (5017) TOTAL QUALITY MANAGEMENT (5018)				•			
4.	501	INDUSTRIAL MANAGEMENT (0362)					•		
5.	601	BUSINESS COMMUNICATION (5022)						•	
APPLIED SCIENCE:									
6.	102	APPLIED SCIENCE (2051) (PHYSICS + CHEMISTRY)	•						
7.	201	APPLIED MATHS (0010)		•					
8.	301	MATHEMATICAL FOUNDATION FOR COMPUTERS (5007)			•				
BASIC TECHNOLOGY:									
9.	103	INTRODUCTION TO PERSONAL COMPUTERS (5001)	•						
10.	104	P.C. UTILITIES AND OPERATING ENVIRONMENT (5002)	•						
11.	202	OFFICE AUTOMATION (5003)		•					
12.	203	COMPUTER ORGANISATION (5004)		•					
13.	204	BASIC PROGRAMMING IN 'C' (5005)		•					
14.	205	BASIC ELECTRICAL, ELECTRONICS & MEASUREMENTS (5006)		•					
15.	302	OPERATING SYSTEMS (5008)			•				
16.	303	DATA BASE MANAGEMENT SYSTEMS (5009)			•				
17.	304	INTERNET & WEB TECHNOLOGY (5010)			•				
18.	502	JAVA PROGRAMMING (5019)					•		
APPLIED ENGG./TECHNOLOGY:									
19.	305	OOPS TECHNIQUES USING C++ (5011)			•				
20.	401	SYSTEM ANALYSIS AND DESIGN (5012)				•			
21.	402	DATA COMMUNICATION (5013)				•			
22.	403	LAN DESIGN & ITS IMPLEMENTATION (5014)				•			
23.	404	PROJECT (MINOR & MAJOR)				•		•	
24.	503	DATA BASE PROGRAMMING (ORACLE & VB) (5020)					•		
25.	504	DISTRIBUTED SYSTEMS (5021)					•		
26.	505	INDUSTRIAL TRAINING (THREE WEEKS)					•		
27.	602	MAJOR PROJECT						•	
28.	603	GRAPHICS AND MULTIMEDIA (5023)						•	
29.	604	COMPUTER NETWORKS (5024)						•	
SPECIAL AREA COURSES (ELECTIVE):									
30.	405	ELECTIVE-I (SELECT ONE) DESK TOP PUBLISHING (5015), COMPUTERISED FINANCIAL ACCOUNTING (5016)				•			
31.	605	ELECTIVE-III (SELECT ONE) E-COMMERCE (5025) , DATA WAREHOUSING & DATA MINING (5026), WINDOWS PROGRAMMING (5027), UNIX & SHELL PROGRAMMING (5028)						•	

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

Programme Name : Three years **Diploma in Information Technology.** Name of scheme: **Dip.IT_SEPT. 2000** Implemented from session 2000-2001

Scheme of Studies and Examinations for: **FIRST SEMESTER**

COURSE CODE	COURSE TITLE	THEORY COMPONENT								PRACTICAL COMPONENT						GRAND TOTAL
		LECTURES	CONTINUOUS EVALUATION			END OF THE TERM / SEMESTER EVALUATION			TOTAL MARKS	PRACTICAL Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			TOTAL	
		Hrs. PER WEEK	TERM WORK	PROG-RESSIVE TESTS (TWO)		THEORY PAPER					LAB. WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)				
				I	II	NO.	MARKS	DUR-ATION (Hrs.)				NO.	MARKS	DURA-TION (Hrs.)		
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 30	1 1	50 50	3 3	80 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	PROFESSIONAL ACTIVITIES (PA)									2	GRADE TO BE AWARDED					
	TOTAL	18	80	40	40	4	400	-	560	16	140	4	200	-	340	900

S.No.		Total marks	Passing marks
A	THEORY	400	Theory : 33%
B	PRACTICAL	200	Practical : 40%
C	Industrial Training	-	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 VISHWAVIDYALAYA, BHOPAL
(FORMERLY M.P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

Programme Name: Three years **Diploma in Information Technology.** Name of scheme: **Dip.IT_SEPT. 2000** Implemented from session 2000-2001

Scheme of Studies and Examinations for: **SECOND SEMESTER**

COURSE CODE	COURSE TITLE	THEORY COMPONENT								PRACTICAL COMPONENT						TOTAL
		LECT-URES	CONTINUOUS EVALUATION			END OF THE TERM / SEMESTER EVALUATION			TOTAL MARKS	PRACTICAL Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			TOTAL	
		Hrs. PER WEEK	TERM WORK	PROG-RESSIVE TESTS (TWO)		THEORY PAPER					LAB. WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)				
				I	II	NO.	MARKS	DUR-ATION (Hrs.)				NO	MARKS	DURA-TION (Hrs.)		
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	PROFESSIONAL ACTIVITIES (P.A.)									2	GRADE TO BE AWARDED					
	TOTAL	17	100	50	50	5	500	-	700	18	100	4	200	-	300	1000

GRAND TOTAL ▲

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

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

Programme Name: Three years **Diploma in Information Technology.** Name of scheme: **Dip.IT_SEPT. 2000** Implemented from session 2001-2002

Scheme of Studies and Examinations for: **THIRD SEMESTER**

COURSE CODE	COURSE TITLE	THEORY COMPONENT								PRACTICAL COMPONENT						TOTAL
		LECT-URES	CONTINUOUS EVALUATION			END OF THE TERM / SEMESTER EVALUATION			TOTAL MARKS	PRACTICAL Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			TOTAL	
		Hrs. PER WEEK	TERM WORK	PROG-RESSIVE TESTS (TWO)		THEORY PAPER					LAB. WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)				
				I	II	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	PROFESSIONAL ACTIVITIES (P.A.)									2	GRADE TO BE AWARDED					
	TOTAL	17	100	50	50	5	500	-	700	19	150	4	200	-	350	1050

GRAND TOTAL ▲

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

Programme Name: Three years **Diploma in Information Technology.** Name of scheme: **Dip.IT_SEPT. 2000** Implemented from session 2001-2002

Scheme of Studies and Examinations for: **FOURTH SEMESTER**

COURSE CODE	COURSE TITLE	THEORY COMPONENT								PRACTICAL COMPONENT						TOTAL
		LECT-URES	CONTINUOUS EVALUATION			END OF THE TERM / SEMESTER EVALUATION			TOTAL MARKS	PRACTICAL Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			TOTAL	
		Hrs. PER WEEK	TERM WORK	PROG-RESSIVE TESTS (TWO)		THEORY PAPER					LAB WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)				
				I	II	NO	MARKS	DUR-ATION (Hrs.)				NO	MARKS	DURA-TION (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	3	75	215
403	LAN DESIGN & ITS IMPLEMENTATION	4	20	10	10	1	100	3	140	2	25	1	50	3	75	215
404	MINOR PROJECT	1	-	-	-	-	-	-	-	8	50	1	50	3	100	100
405	ELECTIVE – I (Select one course)	3	20	10	10	1	100	3	140	2	25	1	50	3	75	215
406	ELECTIVE – II (Select one course)	3	20	10	10	1	100	3	140	-	-	-	-	-	-	140
407	PROFESSIONAL ACTIVITIES (P.A.)									2	GRADE TO BE AWARDED					
	TOTAL	19	100	50	50	5	500	-	700	16	125	4	200	-	325	1025

GRAND TOTAL ▲

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 = 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

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** Implemented from **session 2002-2003**

Scheme of Studies and Examinations: **FIFTH SEMESTER**

COURSE CODE	COURSE TITLE	THEORY COMPONENT								PRACTICAL COMPONENT						
		LECT-URES	CONTINUOUS EVALUATION			END OF THE TERM / SEMESTER EVALUATION			TOTAL MARKS	PRACTICAL Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			TOTAL	TOTAL
		Hrs. PER WEEK	TERM WORK	PROG-RESSIVE TESTS (TWO)		THEORY PAPER					LAB. WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)				
				I	II	NO.	MARKS	DUR-ATION (Hrs.)				NO	MARKS	DURA-TION (Hrs.)		
501	INDUSTRIAL MANAGEMENT 362	5	20	10	10	1	100	3	140	-	-	-	-	-	-	140
502	JAVA PROGRAMMING 5015	4	20	10	10	1	100	3	140	8	50	1	50	3	100	240
503	DATA BASE PROGRAMMING (ORACLE & VB) 5020	3	20	10	10	1	100	3	140	8	50	1	50	3	100	240
504	DISTRIBUTED SYSTEMS 5021	4	20	10	10	1	100	3	140	2	50	1	50	3	100	215
505	INDUSTRIAL TRAINING (THREE WEEKS)	-	-	-	-	-	-	-	-	-	50	1	50*	3	100	100
506	P.P.A.	-	-	-	-	-	-	-	-	2	GRADES TO BE AWARDED					
	TOTAL	16	80	40	40	4	400	-	560	20	200	4	200	-	400	960

GRAND TOTAL ▲

S.No.		Total marks	Passing marks
A	THEORY	400	Theory : 33%
B	PRACTICAL	200	Practical : 40%
C	Industrial Training	100	*Ind. Trg. : 50%
	TOTAL	**700**	Sessional : 60%

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 560
Ratio of (A) : (D) : 1:1.21
Ratio of time allotted for theory and practical portion of the courses in a programme (percentage wise)=44:56

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** Implemented from **session 2002-2003**

Scheme of Studies and Examinations for: **SIXTH SEMESTER**

COURSE CODE	COURSE TITLE	THEORY COMPONENT								PRACTICAL COMPONENT						TOTAL
		LECTURES	CONTINUOUS EVALUATION			END OF THE TERM / SEMESTER EVALUATION			TOTAL MARKS	PRACTICAL Hrs. Per Week	CONTINUOUS EVALUATION	END OF THE TERM/ SEMESTER EVALUATION			TOTAL	
		Hrs. PER WEEK	TERM WORK	PROGRESSIVE TESTS (TWO)		THEORY PAPER					LAB. WORK	PRACTICAL/ ORAL EXAMINATION (VIVA)				
				I	II	NO	MARKS	DURATION (Hrs.)				NO	MARKS	DURATION (Hrs.)		
601	BUSINESS COMMUNICATION 5022	3	20	10	10	1	100	3	140	1	50	1	50	3	100	240
602	MAJOR PROJECT	1	-	-	-	-	-	-	-	8	100	1	50	3	150	150
603	GRAPHICS AND MULTIMEDIA 5023	4	20	10	10	1	100	3	140	4	30	1	50	3	75	215 220
604	COMPUTER NETWORKS 5024	4	20	10	10	1	100	3	140	2	25	1	50	3	75	215
605	ELECTIVE – III (Select one course)	3	20	10	10	1	100	3	140	2	25	1	50	3	75	215
606	P.P.A.									2	GRADE TO BE AWARDED					
	TOTAL	15	80	40	40	4	400	-	560	19	230	4	250	-	478	1040

GRAND TOTAL ▲

S.No.		Total marks	Passing marks
A	THEORY	400	Theory : 33%
B	PRACTICAL	250	Practical : 40%
C	Industrial Training	-	Ind. Trg. : 50%
	TOTAL	650	Sessional : 60%

605-ELECTIVE – III (TH:3+PR:2)

(1) E-COMMERCE 5025
(2) DATA WARE HOUSING & DATA MINING 5026
(3) WINDOWS PROGRAMMING 5027
(4) UNIX AND SHELL PROGRAMMING 5028

D. Total of Practical + Industrial Training + Sessional + Progressive Test = 640
Ratio of (A) : (D) : 1:1.6
Ratio of time allotted for theory and practical portion of the courses in a programme (percentage wise)=49:51

8/1/91

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

ANALYTICAL DATA ABOUT CURRICULUM OF
DIPLOMA IN INFORMATION TECHNOLOGY

(Name of scheme: **Dip. IT_September 2000** , **Implemented from session 2000-01)**

A. DISTRIBUTION OF MARKS

S. No.	Semester	TOTAL OF							GRAND TOTAL (6)	SUM OF COLUMN 2+3+4+5 (7)	RATIO OF 1:7
		THEORY Passing marks:33% (1)	PRACTICAL Passing marks: 40% (2)	SESSIONAL Passing marks:60%			PROGRESSIVE TESTS (4) Passing marks: nil	INDUSTRIAL TRAINING (5) Passing marks: 50%			
				TERM WORK	LAB WORK	TOTAL (3)					
1.	FIRST	400	200	80	140	220	80	NIL	900	500	1:1.25
2.	SECOND	500	200	100	100	200	100	NIL	1000	500	1:1
3.	THIRD	500	200	100	150	250	100	NIL	1050	550	1:1.1
4.	FOURTH	500	200	100	125	225	100	NIL	1025	525	1:1.05
5.	FIFTH	400	150	80	150	230	80	100	960	560	1:1.4
6.	SIXTH	400	250	80	230	310	80	NIL	1040	640	1:1.6
TOTAL		2700	1200	540	895	1435	540	100	5975	3275	1:1.2

B. DISTRIBUTION OF TIME PER WEEK

S. No.	Semester	THEORY (1)	PRACTICAL (2)	PROFESSIONAL ACTIVITIES (3)	TOTAL (4)	PERCENTAGE WISE RATIO OF COLUMN (1) AND SUM OF (2+3)
1.	FIRST	18	14	2	34	53:47
2.	SECOND	17	16	2	35	49:51
3.	THIRD	17	17	2	36	47:53
4.	FOURTH	19	14	2	35	54:46
5.	FIFTH*	15	16	2	33	45:55
6.	SIXTH	15	17	2	34	44:56
TOTAL		101	94	12	207	49:51

* Fifth Semester is of 13 weeks' duration in the institution and three weeks for Industrial training.

C. AWARD OF DIVISION IN FINAL DIPLOMA:

I) TOTAL OF FIFTH AND SIXTH SEMESTER MARKS = 960+1040=2000

II) GRADE IN PROFESSIONAL ACTIVITIES: Best of the grades obtained in P.A. of fifth and sixth semester.

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CURRICULUM

FOR

DIPLOMA IN INFORMATION TECHNOLOGY

(FIFTH SEMESTER)

Scheme: Dip. IT_September 2000

Implemented from session 2002-2003

Under semester system

JULY 2002

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **501**
NAME OF COURSE: **INDUSTRIAL MANAGEMENT**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
C03, M02, E01 AND OTHERS
PAPER CODE: **0362**

RATIONALE

Many diploma pass outs are engaged in shop floor supervisory work. It has been found necessary to impart to the diploma student at the final year level certain concepts, principles, procedures and 'understanding' of management techniques so that he is brought to a fairly high level of competency in 'Supervisor ship'. If he supplements this background with a minimum of experience there can be no reason as to why he wouldn't make as effective supervisor. Engineering students have been earmarked for this course since the shop floor provides the majority of opportunities available for employment.

The course has two faces: a coinage of ' Behavioral Science', where the student is exposed to the principles of Group behavior, to factors which help motivate the workers, the influences which arise out of an organisations structure, and finally an idea of how communication transfer is effected from the highest to lowest level.

The second face to the course deals what is now a days popularly known as the 'Mathematical Approach towards management'. Of-course the use of mathematics-statistics in particular-in planning and controlling production; inventory and project work is common.

Modern management concepts like CPM and PERT, Value Analysis, Inventory control and economic batch size determination, operation - research form the topic concerned under the mathematical approach. It is now realised in all industry that these techniques pay back well on implementation. Detailed coverage of those areas will not only prepares the student needing in the future but would also help him to pay his role in the introduction of these techniques.

The whole course has been introduced through at chapter on 'Systems thinking'. It is felt that considerable time is spent in problem identification and alternative selection when a young engineer encounters problematic situations on the shop floor. A systematic frame of thinking and a proper problem-solving attitude is excellent equipment for the young shop floor engineer.

It is hoped that this course will evoke considerable interest in the diploma student and will help him to get jobs earlier.

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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **501**
NAME OF COURSE: **INDUSTRIAL MANAGEMENT**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S): **C03, M02, E01 AND OTHERS**
PAPER CODE: **0362**

SCHEME OF STUDIES

Course duration: **13** weeks
Lectures: **5** Hrs. per week

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
1.	What is management?	02	-	02
2.	System Thinking.	03	-	03
3.	Materials Management.	10	-	10
4.	Production planning and control.	08	-	08
5.	Value analysis.	02	-	02
6.	Project planning by Network	10	-	10
7.	Industrial Relations.	06	-	06
8.	Supervision and Leadership.	06	-	06
9.	Organisational Dynamics.	08	-	08
10.	Operation Research.	06	-	06
11.	Computers in Management	04	-	04
	TOTAL	65	-	65

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

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **501**
NAME OF COURSE: **INDUSTRIAL MANAGEMENT**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
C03, M03, E01 AND OTHERS
PAPER CODE: **0362**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **5** Hrs. per week

S. NO.	Course Content	Hours of Study
1.	WHAT IS MANAGEMENT Management definition, activities, Theories- Decision, quantitative, mathematical, Behavioural Sciences.	02
2.	SYSTEM THINKING System definition, parameter, production system, Non-production system, objective, system design, procedure system variables, different types of model under system thinking.	03
3.	MATERIALS MANAGEMENT Introduction, function, purchase system, correlation stock turn over, order quantity, time purchase cycle, inventory, need of inventory control, Economic order quantity, simple numerical problems on E.O.Q., Safety stock, function of Inventory control and different techniques of inventory control A.B.C. analysis, simple treatment only. Stores Management: -Definition and importance Storing procedure and store records.	10
4.	PRODUCTION PLANNING AND CONTROL Production system, concept of planning, meaning of PPC, classification, characteristics of each type, function of PPC, place of PPC in the organisation, production and consumption rate, Batch and mass production, Batch size, Buffer stock, Production cost components, concept of production scheduling, loading and scheduling Difference, Gantt chart scheme, advantages and preparation of GANTT chart, interpret updating, critical ratio scheduling. Gap phasing and phasing.	08

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **501**
NAME OF COURSE: **INDUSTRIAL MANAGEMENT**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S): **C03, M02, E01 AND OTHERS**
PAPER CODE: **0362**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **5** Hrs. per week

S. NO.	Course Content	Hours of Study
5.	VALUE ANALYSIS Concept of Cost and Concept of value, objectives, components and types of value, V. A. procedure and V. A. Test. DARA SIRI method, value improvement procedures.	02
6.	PROJECT PLANNING BY NET WORK Net work definition, objectives, different techniques, activities, events, Network formation. PERT & CPM, representation of activities and event on network, rules for drawing network diagram, Fulkerson's rule, Dependency of activities, Dummy activities duration, EST, LST, EPO, LPO, Free float, total float, and Network analysis on tabular form, updating of network, control through updating. Main power loading and calculation on load smoothing.	10
7.	INDUSTRIAL RELATIONS Scope, definition, needs objective and function of personnel management. Job analysis, job description and its constituents, man power as resource, recruitment, selection, training and terminal behaviour of man in an organisation, communication in Industry its need and importance, classification, technique and barriers in communication and their effects, Grievances, its meaning, factors responsible for grievances, process and condition for handling of grievances, strikes and lockouts, conditions, conciliation and adjudication machinery, workforce, human need, motivation, meaning and its benefits, factors responsible for lack of motivation, techniques to boost the motivation in workers, moral - definition, scope and important factors responsible for high moral, ideal working conditions, employer and employee relations, job satisfaction, social and economic values, factors influencing job satisfaction.	06

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **501**
NAME OF COURSE: **INDUSTRIAL MANAGEMENT**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S): **C03, M02, E01 AND OTHERS**
PAPER CODE: **0362**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **5** Hrs. per week

S. NO.	Course Content	Hours of Study
8.	SUPERVISION AND LEADERSHIP Meaning and Role of supervisor in an industry, need of supervision, older workers and their supervision, concept of leadership, qualities of a good leader, managerial style-motivational power and employees relations, effectiveness of leadership system.	06
9.	ORGANISATIONAL DYNAMICS Organisation structure, characteristic and principle of organisation, Modern organisation approach, Types of organisation, meaning and significance of various types, organisation charts resistance to change, employees and attitude, factors for reducing the resistance to change.	08
10.	OPERATION RESEARCH : Definition and concept of O.R., methods of O.R., linear programming problem formulation and Graphical methods Simplex method of linear programming.	06
11.	COMPUTERS IN MANAGEMENT Role of computers in Management, introduction to computer system, personal computer and its uses- introduction to management information system (MIS).	04

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **501**
NAME OF COURSE: **INDUSTRIAL MANAGEMENT**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S): **C03, M02, E01 AND OTHERS**
PAPER CODE: **0362**

REFERENCES

- Learning package on Industrial Management, T.T.T.I., Bhopal
- L. S. Srinath, CPM and PERT -Principles and application.
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- Davar R.S., Personnel Management and Industrial Relations.
- Ray Wild, Production and operations Management, GASSELL.
- Meredith Jack R., Management of operations, John Wiley & Sons
- Production and Operations Management-Contemporary policy for managing operating, Tata McGraw Hill.

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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **502**
NAME OF COURSE: **JAVA PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5019**

RATIONALE

With the enormous growth-taking place in Internet and World Wide Web, Java is rapidly becoming the dominant application development language and system programming language. Java is most appropriate language for integrating Internet into the information system of organisations

The course introduces students to the design of Java language, syntax of Java, programming applets and applications that can perform multiple action in parallels. It also introduces the Java technology that enable Java programs to access databases and explores server side of Java.

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL 16/28
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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **502**
NAME OF COURSE: **JAVA PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5019**

SCHEME OF STUDIES

Course duration: **13** weeks
Lectures: **4** Hrs. per week
Practical: **8** Hrs. per week

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
1.	Overview of Java Language	04	08	12
2.	Classes, Objects & Methods	05	10	15
3.	Arrays, Strings & Vectors	05	10	15
4.	Multithreaded Programming	10	20	30
5.	Applet Programming	10	20	30
6.	JDBC	06	12	18
7.	JSP	12	24	36
	TOTAL	52	104	156

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

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **502**
NAME OF COURSE: **JAVA PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5019**

SPECIFICATION TABLE

Course duration: **13** weeks
Lectures: **4** Hrs. per week

S. NO.	TOPIC	LECT. HOURS	MARKS ALLOTTED (Approximate)
1	Overview of Java Language	04	10
2	Classes, Objects & Methods	05	15
3	Arrays, Strings & Vectors	05	10
4	Multithreaded Programming	10	20
5	Applet Programming	10	20
6	JDBC	06	10
7	JSP	12	15
	TOTAL	52	100

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

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **502**
NAME OF COURSE: **JAVA PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5019**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **4** Hrs. per week

S. NO	Course Content	Hours of Study
1.	OVERVIEW OF JAVA LANGUAGE JAVA and its support systems, JAVA environment. JAVA program structure, Tokens, Statements, JAVA virtual machine, C++ Versus JAVA, Constants & Variables, Data Types, Declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting , Operators: Arithmetic, Relational, Logical Assignments, Increment & Decrement, Conditional, Bit wises, Special, Expressions & its Evaluation. Control statements: If statements and its variant, Switch statement,? Operator, While loop, Do while loop, For loop, Break and continue, Labeled Loops.	04
2.	CLASSES, OBJECTS & METHODS Defining a Class, Adding Variables & Methods, Creating Objects, Accessing Class Members , Constructors, Methods Overloading, Static Members, Nesting of Methods, Inheritance: Extending a Class, Overriding Methods, Concept of public, private and protected, Final Variables & Methods, Final Classes, Finalizer Methods, Abstract methods & Classes, Static class, Visibility Control.	05
3.	ARRAYS, STRINGS & VECTORS Arrays : One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interfaces Variables, Systems Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using Package, Adding a Class to a Package, Hiding Classes	05
4.	MULTITHREADED PROGRAMMING Creating Threads, Extending the Threads Class, Stopping & Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, Threads Exceptions,	10

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **502**
NAME OF COURSE: **JAVA PROGRAMMING**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5019**

COURSE CONTENT

Course duration: **13** weeks
Lecturers: **4** Hrs. per week

S. NO.	Course Content	Hours of Study
	Thread Priority, Synchronization, Implementing the Runnable Interface.	
5.	APPLET PROGRAMMING Local & Remote Applets, Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets, Getting Input from the User.	10
6.	JDBC Understanding JDBC, JDBC Architecture ,types of JDBC driver, Register JDBC driver, establish a database connection, execute an SQL statement, process the result , close the data base connection	06
07	JSP Introduction , compare it with CGI, ASP, JAVA SCRIPT, VBSCRIPT, SERVLET, JAVABEANS – beans properties, set property get property, is property directives – page , include Scripting element-declarative , scriptlet, expression, standard action – JSP use bean.	12

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **502**
NAME OF COURSE: **JAVA PROGRAMMING**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5019**

LIST OF EXPERIMENTS

Course duration: **13** weeks
Practical: **8** Hrs. per week

S. NO.	Name of experiments	Hours of Study
01	Programs using various decision making & looping statements of JAVA.	
02	Programs to demonstrate the use of array, Class & packages.	
03	Programs using Concept of public, private and protected, Final Variables & Methods.	
04	Programs using Final Classes, Finalizer Methods, Abstract methods & Classes, Static class, Visibility Control.	
05	Program for creating & extending thread.	
06	Programs to demonstrate the use of multiple threads.	
07	Programs to create an applet for "HELLO " & call this in HTML.	
08	Programs to demonstrate the use of various applet tags, Designing data entry forms using various building blocks at client side.	
09	Program to connect single & multiple database using JDBC concept.	
10	Program to view the online catalog using JSP, JDBC & database.	
11	Program using JSP to prevent user from bypassing login.	
	TOTAL	104

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **502**
NAME OF COURSE: **JAVA PROGRAMMING**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5019**

REFERENCES

TEXT BOOKS:

- E. Balaguruswami, Programming in Java, 2nd Edition, TMH Publications
- Paul Tremblett, Instant Java Server Pages, TMH Publications

REFERENCE BOOKS:

- Peter Norton , Peter Norton Guide to JAVA Programming, Techmedia Publications.
- Stroker, Plew, 1998, An introduction to JAVA, Thomson learning.

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL 16/34

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE:: **503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

RATIONALE

The server database management software is covered through relational database programming & administration. Client end programming concepts & accessing server data will help in designing necessary information content for users.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **'503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

SCHEME OF STUDIES

Course duration: **13** weeks
Lectures: **3** Hrs. Week
Practical: **8** Hrs. Per Week

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
1.	Database Administration	03	02	05
2.	SQL & PL/SQL	12	25	37
3.	Client Basic Building Blocks	08	20	28
4.	Programming Flow	08	25	33
5.	Accessing & Controlling Data	06	20	26
6.	OLE , Graphics & Menu	02	12	14
	TOTAL	39	104	143

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

SPECIFICATION TABLE

Course duration: **13** weeks
Lectures: **3** Hrs. Week

S. NO.	TOPIC	LECT. HOURS.	MARKS ALLOTTED (Approximate)
1	Database Administration	03	10
2	SQL & PL/SQL	12	25
3	Client Basic Building Blocks	08	10
4	Programming Flow	08	25
5	Accessing & Controlling Data	06	20
6	OLE , Graphics & Menu	02	10
	TOTAL	39	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **3** Hrs. Week

S. NO.	Course Content	Hours of Study
1.0	DATABASE ADMINISTRATION	03
1.1	Managing the database, Creating a new database, Start-up & Shutdown: STARTUP Stages, Shutdown Stages.	
1.2	Managing Users User database accounts: Creating, Modifying & deleting user accounts changing user passwords, Backup & Recovery.	
2.0	SQL & PL/SQL	12
2.1	SQL Data Definition Language (DDL) - Creating, Altering & Dropping tables, Integrity Constraint. Data Manipulation Language (DML) - Select, Insert, Update, Delete Commands. Sorting, Grouping, Nested query Joins. Transaction Control using SQL – Commit, Rollback, Save point commands. Data Controlling using SQL – Grant, Revoke, Set Role.	
2.3	SQL functions.	
2.4	Tools & Utilities: Import & Export, SQL *Loader.	
2.5	PL/SQL	
2.6	SQL & PL/SQL : Difference between SQL & PL/SQL,	
2.7	Blocking code for clarity, using variables, constants & Data types, Assigning database values to variables Select... Into.	
2.8	Using flow control statements The If - Then statement, Loop statement, While loops statement, Go to statement, Cursors, Stored Procedures, Using database Triggers.	
2.9	Error Handling Built in PL/SQL Exceptions, User – defined exceptions, The RAISE – APPLICATION - Error procedure.	

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **3** Hrs. Week

S. NO.	Course Content	Hours of Study
3.0	CLIENT BASIC BUILDING BLOCKS	08
3.1	Property, Methods, PROJECT EXPLORER, PROPERTY WINDOW, IMMEDIATE WINDOW	
3.2	Form, Child objects, Textbox, Label, combo box, list box, radio button, check box, scroll bar, OLE, Timer, Drive list box, Dir list box, File List box, Picture, Image, grouping control.	
3.3	Loading showing & hiding form, controlling one form with other, form events, Input box, Message box.	
3.4	Events- Mouse events, Drag drop Events, Set focus, Lost focus, Got Focus, Common Dialog Box.	
3.5	Creating EXE of project	
4.0	PROGRAMMING FLOW	08
4.1	Declaring variable, Converting variable types, Array, control array, string functions-MID, INSTR, LEFT, RIGHT, LIKE	
4.2	Decision maker statements–If, Select case, Do While loop, For Next, Exit for, Exit do	
4.3	Function, Procedure, Basic module, arguments	
4.4	Testing & Debugging: Debugging, Trace, watch, breakpoint	
5.0	ACCESSING & CONTROLLING DATA	
5.1	Data entry form, form validation, Visual Data Manager, date base creation in Oracle, SQL, ODBC, ADO, connection, command, recordset & their methods, cursor, page size, cache size, fetching, searching, sorting, counting records save & update database,	06
5.2	Multiple Table handling, DBGRID.	
5.3	Data Environment Designer – Creating connection & command object, Data-Bound Control, Data Report Designer.	

SEMESTER: **FIFTH**
COURSE CODE: **503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: **Dip. IT_September' 2000**
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **3** Hrs. Week

S. NO.	Course Content	Hours of Study
6.0	OLE , GRAPHICS & MENU OLE implementation, Graphics – form fills, Exchanging object through clipboard Drawing, Line, Rectangle, Circle, Text Designing menu, Programming menu commands, using access & short cut keys, SDI & MDI forms.	02

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

LIST OF EXPERIMENTS

Course duration: **13** weeks
Practical: **8** Hrs. Per Week

S. NO.	Name of experiments	Hours of Study
01	Create tables with primary & foreign key.	02
02	Execute SQL for insert, retrieval, update & delete data from single & multiple tables.	15
03	Creating & dropping indexes, sorting & grouping.	04
04	Creating users, Granting & Revoking permissions set Roles to users.	04
05	PL/SQL program using flow control statements functions.	15
06	Creating Triggers, Stored Procedures and Cursors.	04
07	Importing/Exporting data between Access & Oracle.	01
08	Designing data entry forms using various building blocks at client side.	20
09	Use of OLE/Graphics at client side.	14
10	Connecting Backend to Front end using Data Control, ADO, Data Environment.	15
11	Report Creation.	10
	Total	104

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **503**
NAME OF COURSE: **DATABASE PROGRAMMING (ORACLE & VB)**

SCHEME: Dip. IT_September' 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5020**

REFERENCES

TEXT BOOKS:

- Bobroski, Oracle & Client/Server
- McBride D, Programming in Visual basic, BPB Publication

REFERENCE BOOKS:

- Oracle press.
- Mohammed Azam, Programming with VB 6.0, Vikas Publishing House.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **504**
NAME OF COURSE: **DISTRIBUTED SYSTEMS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5021**

RATIONALE

Distributed system has grown in last two or three decade such as inter process communication, distributed file system, distributed transaction machine etc to provide runtime infrastructure support in network application.

The course content enables students to gain knowledge about how distributed systems functions, what are their components. How it could be implemented.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **504**
NAME OF COURSE: **DISTRIBUTED SYSTEMS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5021**

SCHEME OF STUDIES

Course duration: **13** weeks
Lectures: **4** Hrs. per week
Practical: **2** Hrs. week

S. No.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
1	Characterization of Distributed Systems	4	-	4
2	System Models	4	-	4
3	Distributed Objects	6	-	6
4	Distributed File System	6	-	6
5	Transaction & Concurrency Control	9	-	9
6	Distributed Transaction	9	-	9
7	Distributed Multi-media system	7	-	7
8	Distributed Sheared Memory	7	-	7
	TOTAL	52	26	78

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **504**
NAME OF COURSE: **DISTRIBUTED SYSTEMS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5021**

SPECIFICATION TABLE

Course duration: **13** weeks
Lectures: **4** Hrs. Week

S. NO.	TOPIC	LECT. HOURS.	MARKS ALLOTTED (Approximate)
1	Characterization of Distributed Systems	4	05
2	System Models	4	10
3	Distributed Objects	6	15
4	Distributed File System	6	15
5	Transaction & Concurrency Control	9	20
6	Distributed Transaction	9	15
7	Distributed Multi-media system	7	10
8	Distributed Sheared Memory	7	10
	TOTAL	52	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **504**
NAME OF COURSE: **DISTRIBUTED SYSTEMS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5021**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **4** Hrs. Week

S. No.	Course Content	Hours of study
1	CHARACTERIZATION OF DISTRIBUTED SYSTEM	04
1.1	Introduction	
1.2	Examples of Distributed System	
1.3	Resource sharing & WWW	
1.4	Challenges	
2	SYSTEM MODELS	04
2.1	Architectural Models	
2.2	Fundamental Models	
3	DISTRIBUDED OBJECTS	06
3.1	Introduction	
3.2	Objects & Communication between it	
3.3	Remote Procedure Calls	
3.4	Event & Notification	
4	DISTRIBUDED FILE SYSTEM	06
4.1	Introduction	
4.2	File Services & Architecture	
4.3	SUN Network File System	
4.4	The Andrew File System	
5	TRANSACTION & CONCURRENCY CONTROL	09
5.1	Introduction	
5.2	Transactions	
5.3	Nested transaction	
5.4	Locks	
5.5	Optimistic Concurrency Control	
5.6	Timestamp Ordering	

DIPLOMA IN INFORMATION TECHNOLOGY

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SEMESTER: **FIFTH**
COURSE CODE: **504**
NAME OF COURSE: **DISTRIBUTED SYSTEMS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5021**

COURSE CONTENT

Course duration: **13** weeks
Lectures: **4** Hrs. Week

S. No.	Course Content	Hours of study
6	DISTRIBUTED TRANSACTION	07
6.1	Type of Distributed Transaction	
6.2	Atomic Commit Protocols	
6.3	Concurrency Control in Distributed Transaction	
6.4	Distributed Dead Locks	
6.5	Transaction recovery	
7	DISTRIBUTED MULTI-MEDIA SYSTEM	09
7.1	Introduction	
7.2	Characteristic of Multi Media Data	
7.3	Quality of Service Management	
7.4	Resources Management	
7.5	Stream adaptation	
8	DISTRIBUTED SHEARED MEMORY	07
8.1	Introduction	
8.2	Issues on Design & Implementation	
8.3	Sequential Consistency	
8.4	Release Consistency & Munin	

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **504**
NAME OF COURSE: **DISTRIBUTED SYSTEMS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5021**

LIST OF EXPERIMENTS

Course duration: **13** weeks
Practical: **2** Hrs. Per Week

S. NO.	Name of experiments	Hours of Study
1	Case study of SUN RPC.	
2	Case Study of Java RMI.	
3	Case Study of SUN NFS	
4	Case Study of Windows NT NFS	
5	Case Study of CORBA RMI & Services.	
	Total	26

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **504**
NAME OF COURSE: **DISTRIBUTED SYSTEMS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5021**

REFERENCES

TEXT BOOKS:

- Couloris G., Dollimove Jean, Kindberg Tim, 2001, 3e, Distributed Systems: Concept & Design, Pearson Education Asia.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **505**
NAME OF COURSE: **INDUSTRIAL TRAINING**

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

RATIONALE

Technological Developments are taking place at a very fast pace. Indian industries are adopting new technologies to compete with time. Declining competence of technical pass outs has seriously forced academicians, to bring changes and improve instructional strategies.

It has been emphasised at all levels that pass outs of Polytechnics must have exposure of Industrial scenario during their studies. To provide them real work awareness, it is therefore essential to provide them opportunities through "INDUSTRIAL TRAINING". Regular and well-planned "INDUSTRIAL TRAINING" can help students to broaden their views and appreciate the importance of practical work in their life. This will also help in enriching and reinforcing classroom learning.

Successful implementation of the INDUSTRIAL TRAINING programme is teamwork and administrative support from its conception to completion stage is a prerequisite. The administrative support at all levels must therefore be ensured.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **505**
NAME OF COURSE: **INDUSTRIAL TRAINING**

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

SCHEME OF STUDIES

Duration: 3 weeks

SCHEME OF EXAMINATION

For the assessment of industrial training undertaken by the students, following components are considered with their weightage.

(a) Lab work

In Industry	Marks allotted
1. Attendance and General Discipline	10
2. Daily diary Maintenance	10
3. Initiative and participative attitude during training	10
4. Assessment of training by Industrial Supervisor	20
TOTAL	50

(b) Practical/Oral Examination (Viva-Voce)

In Institution	Marks allotted
1. Training Report	25
2. Seminar and cross questioning (defense)	25
TOTAL	50

Marks of various components in industry should be awarded to the students, in consultations with the Training and Placement Officer/Faculty of Institute and I/c of training from Industry. During training students will prepare a first draft of training report in consultation with section in-charge. After training they will prepare final draft with the help of T.P.O./Faculty of the institute. Then they will present a seminar on their training and they will face viva-voce on training in the institute.

DIPLOMA IN INFORMATION TECHNOLOGY

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SEMESTER: **FIFTH**
COURSE CODE: **505**
NAME OF COURSE: **INDUSTRIAL TRAINING**

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

1.1 OBJECTIVE OF INDUSTRIAL TRAINING

Industrial training of the students is essential to bridge the wide gap between the classroom and industrial environment. This will enrich their practical learning and they will be better equipped to integrate the practical experiences with the classroom learning process.

1.2 LEARNING THROUGH INDUSTRIAL TRAINING

During industrial training students must observe following to enrich their learning:

- Industrial environment and work culture.
- Organisational structure and inter personal communication.
- Machines/ equipment/ instruments - their working and specifications.
- Product development procedures and phases.
- Project planning, monitoring and control.
- Quality control and assurance.
- Maintenance system.
- Costing system.
- Stores and purchase systems.
- Layout of Computer/ EDP/MIS centres.
- Roles and responsibilities of different categories of personnel.
- Customer services.
- Problems related to various areas of Work etc.

Faculty and TPO are supposed to plan industrial training in such a manner that students get exposure on most of the above arena in the field (world of work). Students are supposed to acquire the knowledge on above by -

1. Observation,
2. Interaction with officials at the workplace
3. Study of Literature at the workplace (e.g. User Manual, standards, maintenance schedules, etc.)
4. "Hand's on" experience
5. Undertaking / assisting project work.
6. Solving problems at the work place.
7. Presenting a seminar.
8. Participating in-group meeting/ discussion.
9. Gathering primary and secondary data/ information through various sources, Storage, retrieval and analysis of the gathered data.
10. Assisting officials and managers in their working.
11. Undertaking a short action research work.

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12. Consulting current technical journals and periodicals in the library.
13. Discussing with peers.

1.3 GUIDANCE TO THE FACULTY/TPO FOR PLANNING AND IMPLEMENTING THE INDUSTRIAL TRAINING

The industrial training programme, which is spread to 3 weeks' duration, has to be designed in consultation with the authorities of the work place, keeping in view the need of the contents. Following are some of the salient points:

- Spelling out the objectives of the industrial training in behavioral terms and same is informed in advance to the 1) students, 2) authorities of the work place and 3) supervising faculty members.
- Discussing and preparing students for the training for which meetings with the students has to be planned.
- Meeting with industrial personnel and orienting them regarding the objective of the training and the expectations of the Polytechnic system.
- Correspondence with the authorities of the work place.
- Orientation classes for students on how to make the training most beneficial - monitoring daily diary, writing weekly reports, how to interact with various categories of industrial personnel, how to behave and undertake responsibilities, how to gather information from the workplace, ethics etc.
- Guiding students to make individual plans (week wise/ day wise) to undertake industrial training
- Developing a system of maintaining training records, by teachers for every batch of students for covenient retrieval.
- Inviting industrial personnel to deliver lectures on some aspects of training.

1.4 ACTION PLAN FOR PLANNING STAGES AT THE INSTITUTION LEVEL

S.No.	Activity	Commencing Week	Finishing week	Remarks
1.	Meeting with Principal			
2.	Meeting with Colleagues			
3.	Correspondence with work place (Industries concerned)			
4.	Meeting with authorities of work place			
5.	Orientation of students for industrial training			
6.	Scrutinizing individual training plan of students			
7.	Commencement of industrial training			
8.	First monitoring of industrial training			
9.	Second monitoring of industrial training			
10.	Finalization of Training report			
11.	Evaluation of performance at Industry level			
12.	Evaluation of industrial programme in the institution.			

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1.5 INDUSTRIAL TRAINING

DAILY DIARY

Name of the Trainee:.....Polytechnic:.....
Industry/Work place:.....
Department/Section:.....Week No.:.....
.....Date:.....

Dates	Brief of observations made, work done, problem/project undertaken, discussion held, literature-consulted etc.

Signature of Supervisor (TPO/Faculty) | Signature of Trainee | Signature of Official In-charge for Training in Industry

1.6 SUPERVISION OF INDUSTRIAL TRAINING

- One polytechnic faculty member or TPO will plan Industrial training of students in consultation with training manager of the industry (work place) as per the predefined objectives of training.
- During training students will maintain a proper daily diary (format enclosed). Main purpose of daily diary is to inculcate the habit of systematic recording of learning experiences and events etc. Section in-charge of the industry is requested to sign the daily diary at the end of the week and offer his comments about the initiative and participative attitude of trainee during training. Details about how to write daily diary will be provided by the institute.
- Attendance record of each trainee may please be kept in the industry. Absence without permission may please be communicated to the Polytechnic.
- Monitoring visits will be made by training and placement officer/faculty in-charge for the group of students, of the Polytechnic during training.

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **FIFTH**
COURSE CODE: **506**
NAME OF COURSE: **PROFESSIONAL ACTIVITIES**

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

Practical Hours: **2** Hrs. per week

RATIONALE

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 code106 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.

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/eminent 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.

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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.).

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

Grades	Level of performance
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 assessments 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.

J) 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.

These activities should preferably be conducted in English language to maintain continuity and provide reinforcement to skill development process.

Small groups shall be formed like in tutorials, group discussion, case studies, seminar, project methods, games, role-play & simulation to make the development of personality affective.

Treatment of P.A. demands special efforts, attention, close- co-operation 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, 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.

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CURRICULUM

FOR

DIPLOMA IN INFORMATION TECHNOLOGY

(SIXTH SEMESTER)

Scheme: Dip. IT_September 2000

Implemented from session 2002-2003

Under semester system

JULY 2002

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL
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RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL 16|58
(FORMERLY M. P. BOARD OF TECHNICAL EDUCATION, BHOPAL.)

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **601**
NAME OF COURSE: **BUSINESS COMMUNICATION**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5022**

RATIONALE

The aim of teaching the subject Business Communication is to develop communication skills (speaking, listening, reading and writing) among polytechnic students. The foundation has already been laid by teaching them communication skills in first semester. It has been observed that diploma holders in the world of work have to carryout variety of activities requiring command over above skills.

The course on Business Communication will enable students to

- Learn techniques of communication;
- Increase awareness of the importance of communication at work;
- Avail opportunities for practicing some of the key skills.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **601**
NAME OF COURSE: **BUSINESS COMMUNICATION**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5022**

SCHEME OF STUDIES

Lectures: **3**Hrs. Per week

S. NO.	TOPIC	SCHEME OF STUDIES Hrs. of Study		
		Theory	Practical	Total
1.	Communication	04	-	04
2.	Oral Communication	10	04	14
3.	Written Communication	14	04	18
4.	Inter Office Communication	05	02	07
5.	Reports	10	04	14
6.	Telecommunication	05	02	07
	Total	48	16	64

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **601**
NAME OF COURSE: **BUSINESS COMMUNICATION**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5022**

SPECIFICATION TABLE

Lectures: 3 Hrs. per week

S. NO.	TOPIC	LECT. HOURS.	MARKS ALLOTTED (Approximate)
1.	Communication	04	10
2.	Oral Communication	10	20
3.	Oral Communication	14	30
4.	Inter Office Communication	05	10
5.	Reports	10	20
6.	Telecommunication	05	10
	Total	48	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **601**
NAME OF COURSE: **BUSINESS COMMUNICATION**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5022**

COURSE CONTENT

Lectures: **3** Hrs. per week

S. NO.	Course Content	Hours of Study
1.	COMMUNICATION Definition: Communication as a tool Need for Business Communication Methods of Business Communication Essentials of communication Communication process Barriers to Communication and ways to overcome them Principles of effective Communication Difference between literary & technical style of writing Features of technical writing	04
2.	ORAL COMMUNICATION Development of Oral Communication skill through following tools/devices: Face to face Communication Using Telephones Interviews Speaking in Public Group discussion Conference	10
3.	WRITTEN COMMUNICATION Business Letters Need and essentials of effective Business Letters Types and practice of writing following Business Letters: Letter of enquiry and replies Placing order Credit and Status enquiry Complaint	14

DIPLOMA IN INFORMATION TECHNOLOGY

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SEMESTER: **SIXTH**
COURSE CODE: **601**
NAME OF COURSE: **BUSINESS COMMUNICATION**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5022**

Lectures: 3 Hrs. per week

COURSE CONTENT

S. NO.	Course Content	Hours of Study
	Correspondence with Bank and Insurance Company	
	Drafting Advertisement and Tender Notices	
	Application for job	
	Bio-data & CV	
	Interview Call	
	Drafting of Notice for meeting	
	Agenda formation and minutes of meeting	
	Press release	
4.	INTER OFFICE COMMUNICATION	05
	Meaning	
	Drafting following types of Inter Office Communication	
	Office Memorandum, Office Orders, Office Circulars, Office Notes	
5.	REPORTS	
	Meaning	10
	Importance	
	Characteristics of a good Report	
	Categories base on-	
	a) Nature: Periodic/routine reports, Progress reports, Examination reports & Survey reports, Statistical reports, Recommendation reports	
	b) Number of person involved in reporting: Individual, Group	
	c) Legal formalities: Formal reports, Informal reports	
6.	TELECOMMUNICATION	05
	Drafting Telegrams	
	Facsimile & e-mail messages	
	On line interaction over network	

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **601**
NAME OF COURSE: **BUSINESS COMMUNICATION**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5022**

LIST OF EXPERIMENTS

Practical: 1 Hr per week

S. NO.	Name of experiments	Hours of Study
1.	Conduct some oral communication exercises in a group for given situations.	
2.	Write few business letters on different matters.	
3.	Student should prepare their CV, /bio-data and also draft application for a job against an advertisement.	
4.	Prepare drafts for some inter office communication	
5.	Show some samples of good inter office communication of reputed organisation and discuss their features.	
6.	Prepare reports of meetings, progress of work, given incident, accidents, absence from work, explanation notices etc.	
6.	Draft sample telegrams, e-mail and FAX messages.	
7.	Demonstrate/conduct telephonic talk.	
8.	Deliver a lecture on a given topic.	
9.	Familiarisation with business etiquette	
	Total	16

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **601**
NAME OF COURSE: **BUSINESS COMMUNICATION**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5022**

REFERENCES

TEXT BOOKS:

- Dr. Rajendra Pal & J.S. Korlahalli, Essentials of Business Communication, Sultan Chand & Sons, New Delhi.
- Shirley Taylor, Communication for Business, Longman, England.
- Technical English Book II - Complied by Curriculum Development Centre, TTTI, Somaiya Publications, Bombay.

REFERENCE BOOKS:

- Verma K. C., The Art of Communication, Associated Publishing House.
- M. V. Rodriques, Effective Business Communication, Concept Publishing Company, New Delhi.
- David Silk, How to Communicate in Business, The Institution of Electrical Engineers, London.
- Madhukar R K, (2001), Business communication and customer relations, Vikas Publishing House, New Delhi.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **602**
NAME OF COURSE: **MAJOR PROJECT**

SCHEME: Dip. IT_September' 2000

RATIONALE

The objective of the course 'Major Project' is

- To provide students with a comprehensive experience for applying the knowledge gained so far by studying various courses.
- To develop an inquiring aptitude and build confidence among students by working on solutions of small industrial problems.
- To give students an opportunity to do some thing creative and to assimilate real life work situation in institution.
- To adapt students for latest developments and to handle independently new situations.
- To develop good expressions power and presentation abilities in students.

Students already have a glimpse of project work as they have worked on Minor Project Work in IV semester. The search for project work starts from the fifth semester itself when the students are sent for industrial training. This gives the students an occasion to observe the work on real life projects and select some application area in which he/she will be undertaking project. External guide from industry can also be selected for project work along with an internal guide to prepare innovative and real projects. Students also have the flexibility of extending the minor project work into Major project, if the area has a scope for that.

The purpose of providing one hour per week for lectures is to orient the student's in-groups on the following objectives:

- Provide general guidelines regarding execution of work.
- Impart instructions regarding write-up work and preparation of project documents.
- Sharing and solving common problems associated with execution of project work.
- Monitor and evaluate the progress of project work.

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DIPLOMA IN INFORMATION TECHNOLOGY

SCHEME: Dip. IT_September' 2000

SEMESTER: **SIXTH**
COURSE CODE: **602**
NAME OF COURSE: **MAJOR PROJECT**

SCHEME OF STUDIES

Lectures: **1** Hr. per week
Practical: **8** Hrs. per week

S. No.	TOPIC	CONTACT HOURS PER WEEK		
		THEORY	PRACTICAL	TOTAL
1.	Major Project	16	128	144
	Total	16	128	144

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **602** SCHEME: Dip. IT_September' 2000
NAME OF COURSE: **MAJOR PROJECT**

COURSE GUIDELINES

Lectures: **1** Hr. per week
Practical: **8** Hrs. per week

S. No.	Detailed Course Guidelines	STUDY HRS.
1	**Major Project Guidelines**: The focus of the Major Project is on preparing a working system (e.g. software system), using system analysis tools and design techniques and submit it in the form of a write-up i.e. detail project report. The student should select some real life problems for their project and maintain proper documentation of different stages of project such as requirement specification, objectives, work plan, analysis, design, implementation and test plan. Each student is required to prepare a project report and present the same at the final examination with a demonstration of the system. The faculty and student should work according to following schedule: i) Each student undertakes substantial and individual project in an approved area of the subject and supervised by a member of staff. ii) The student must submit outline and action plan for the project execution (time schedule) and the same be approved by the concerned faculty. iii) The project development must be carried out according to following steps and final write-up should have the same sequence. ➢ Project objectives. ➢ Requirement gathering. ➢ Modeling of project should be done in any well known modeling tools like Flow Chart, DFD, UML etc. ➢ Analysis of project. ➢ Design of project. ➢ Implementation of project. ➢ Testing of project. ➢ Quality consideration of software. ➢ Designing a small user manual. ➢ System requirement for designed software.	16+128 = 144

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH** SCHEME: Dip. IT_September' **2000**
COURSE CODE: **602**
NAME OF COURSE: **MAJOR PROJECT**

COURSE GUIDELINES

Lectures: **1** Hr. per week
Practical: **8** Hrs. per week

S. No.	Detailed Course Guidelines	STUDY HRS.
	➢ Estimating the cost of the project. ➢ Future scope and suggestions. iii) The above project should be implemented by using OOPs Languages, Visual tools, Graphic tools, RDBMS, Web Design supporting packages and tools etc. iv) Suggested areas of project ➢ Web Technology based applications ➢ Database management systems ➢ Communication and Network ➢ Graphic based application ➢ System software ➢ Automation etc.	

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ACTION PLAN FOR MAJOR PROJECT WORK AND EVALUATION SCHEME# (SUGGESTIVE):

TASK/PROCESS	WEEK	EVALUATION	MARKING#
• Orientation of students by HOD/Project supervisor	1st	-	-
• Literature survey and resource collection	2nd		10
• Selection and finalisation of topic before a committee*	3rd	Seminar –I	10
• Detailing and preparation of project (Modeling, Analysis and Design of project work)	4th to 5th	-	10
• Development stage	6th to 10th	-	20
• Testing, improvements, quality control of project	11th	-	10
• Acceptance testing	12th	-	10
• Report writing	13th to 15th	-	15
• Presentation before a committee (including user manual)	16th	Seminar-II	15
	16 weeks	-	100

*Committee comprises of HOD, all project supervisors including external guide from industry (if any).

The above marking scheme is suggestive, it can be changed to alternative scheme depending on the type of project, but the alternative scheme should be prepared in advance while finalising the topic of project before a committee and explained to the concerned student as well.

NOTE: Marks for continuous evaluation (i.e. Lab work) to be awarded after II seminar:

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **603**
NAME OF COURSE: **GRAPHICS & MULTIMEDIA**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5023**

RATIONALE

Graphics deals with the theory & technology for computerised image synthesis. Stunning visual effects are often achieved by using a combination of computer graphics & image processing techniques. Objective of teaching this course is to enable students to develop & design interactive protocols that make effective use of devices & graphics in a user friendly way, (easy, intuitive, efficient etc.) The course covers hardware, graphics languages & graphics applications.

Multimedia technology is bringing together several existing products such as PC, telephone & television and combining them in such a way that the borders & definition that make a television recognisable as such will rapidly disappear.

The course deals with this revolution owing to developments in PC Technology, Video and Audio compression, telecommunications & many other disciplines.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE; **603**
NAME OF COURSE: **GRAPHICS & MULTIMEDIA**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5023**

SCHEME OF STUDIES

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

S. NO.	TOPIC	SCHEME OF STUDIES Hrs. of Study		
		Theory	Practical	Total
1.	Overview of Graphics	3	2	5
2.	Graphical Devices	5	3	8
3.	Graphics primitives	8	8	16
4.	Transformations	8	8	16
5.	Shading and Colour Modules	6	4	10
6.	Graphic User Interface (GUI)	8	8	16
7.	Concept of Multimedia	5	2	7
8.	Multimedia Building Blocks	8	8	16
9.	Multimedia Applications	8	14	22
10.	Multimedia Software	5	7	12
	Total	64	64	128

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **603**
NAME OF COURSE: **GRAPHICS & MULTIMEDIA**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5023**

SPECIFICATION TABLE

Lectures: **4** Hrs. per week

S. NO.	TOPIC	LECT. HOURS.	MARKS ALLOTTED (Approximate)
1.	Overview of Graphics	3	05
2.	Graphical Devices	5	05
3.	Graphics primitives	8	15
4.	Transformations	8	10
5.	Shading and Colour Modules	6	10
6.	Graphic User Interface (GUI)	8	10
7.	Concept of Multimedia	5	08
8.	Multimedia Building Blocks	8	12
9.	Multimedia Applications	8	15
10.	Multimedia Software	5	10
	Total	64	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **603**
NAME OF COURSE: **GRAPHICS & MULTIMEDIA**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5023**

COURSE CONTENT

Lectures: 4 Hrs. per week

S. No.	Course Content	Hours of study
1.	OVERVIEW OF GRAPHICS Introduction, Terminology, Fundamentals of Raster and Random Graphics	3
2.	GRAPHICAL DEVICES Video Display Devices, CRT, LCD, Plasma Panel Input Devices: Keyboard, Mouse, Joy Stick, Digitizer, Scanners, Touch panels, Light pens, Voice Systems. Hard Copy Devices: Printer and Plotters (Classification & Types)	5
3.	GRAPHICS PRIMITIVES Points, Lines and Circles, Drawing algorithm: DDA algorithm, Bresenham's Line Algorithm, Circles Graphics algorithms: Properties of Circles, Midpoint Circles algorithm	8
4.	TRANSFORMATIONS Basic Transformations: Translations, Rotations, Scaling, Other Transformations: Reflection & Shear.	8
5.	SHADING AND COLOR MODULES Light sources (Basics), Basic illumination Models: Ambient Light, Diffuse & spectacular reflection Introduction of Color models	6
6.	GRAPHIC USER INTERFACE (GUI) Event driven Programming Types of Events User interface tools: Menus, Command Button, Tax Box, List Box, Combo Box, Dialogue Box, Check Box, Radio Button.	6

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **603**
NAME OF COURSE: **GRAPHICS & MULTIMEDIA**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5023**

COURSE CONTENT

Lectures: **4** Hrs. per week

S. No.	Course Content	Hours of study
7.	CONCEPT OF MULTIMEDIA Introduction to Multimedia, User of multimedia, Components of Multimedia, Multimedia Elements, Analog and Digital signals.	5
8.	MULTIMEDIA BUILDING BLOCKS Graphics, Text, Video, Sound, Tools and Process of: Text, Sound, images, Animations Video & Graphics elements. Morphing & Tweaking	8
9.	MULTIMEDIA APPLICATIONS Project Planning, Costing, Designing, Developing, Testing, Delivering CD ROM Technology & DVD	8
10.	MULTIMEDIA SOFTWARE Introduction to popular Multimedia Software and their features.	5

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **603**
NAME OF COURSE: **GRAPHICS & MULTIMEDIA**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5023**

LIST OF EXPERIMENTS

Practical: **4** Hrs. per week

S. No.	Name of Experiments	Hours of study
1.	(a) Draw a Line (b) Draw a Triangle (c) Draw a Circle	
2.	Fill colours in various closed shaped objects	
3.	Make use of translation, rotation & scaling for different objects	
4.	Create an object and animate in a view port.	
5.	Make use of Morphing using the object created in experiment no. 4	
6.	Case Study : Students have to submit a report, which incorporates project planning, costing, designing, developing and testing by using any popular Multimedia software.	
	Total	64

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **603**
NAME OF COURSE: **GRAPHICS & MULTIMEDIA**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5023**

REFERENCES

TEXT BOOKS:

- Hearn & Baker, Computer Graphics, PHI New Delhi.
- Tay Vaughn, Multimedia-making it works, Tata McGraw Hills.

REFERENCE BOOKS:

- S. Harringon, Computer Graphics - A programming, Tata McGraw Hills.
- M. Morris, Computer Graphics & CAD Fundamentals, Wheeler Publishing, Allahabad.
- John Villamil Casanova, Multimedia an Introduction, PHI New Delhi.
- Ian Sinclair, Multimedia on the PC, BPB Publications.
- Shuman E James, Multimedia in Action, Vikas Publishing House Pvt. Ltd.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
NAME OF COURSE: **COMPUTER NETWORKS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

RATIONALE

The merging of computer and communication has had a profound influence on the way computer systems are organised. The old model of single computer serving all of the organisations computational needs has been replaced by one in which a large number of separate but interconnected computers do the job. These systems are called computer networks. The computer networks are widely used by companies and people.

The course gives an understanding of IP addressing, Internal multicasting and various applications. By studying the course, students will develop knowledge and practical experience of technical advances and changes in the field of communication and networking.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
NAME OF COURSE: **COMPUTER NETWORKS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

SCHEME OF STUDIES

Lectures: 4Hrs. Per week
Practical: 2 Hrs. per week

S. NO.	TOPIC	SCHEME OF STUDIES		
		Hrs. of Study		
		Theory	Practical	Total
1.	Introduction and review	4	-	4
2.	Internet addresses	6	2	8
3.	ARP/RARP	6	-	6
4.	Internet protocol	8	-	8
5.	Subnet and supernet address extension	6	-	6
6.	UDP & TCP	8	12	20
7.	Routings	4	-	4
8.	Internet multicasting	4	-	4
9.	Socket interface	6	8	14
10.	DNS	6	-	6
11.	Applications	6	8	14
	Total	64	32	96

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
NAME OF COURSE: **COMPUTER NETWORKS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

SPECIFICATION TABLE

Lectures: **4** Hrs. per week

S. NO.	TOPIC	LECT. HOURS	MARKS ALLOTTED (Approximate)
1.	Introduction and review	4	08
2.	Internet addresses	6	08
3.	ARP/ RARP	6	08
4.	Internet protocol	8	10
5.	Subnet and supernet address extension	6	10
6.	UDP & TCP	8	12
7.	Routings	4	10
8.	Internet multicasting	4	08
9.	Socket interface	6	08
10.	DNS	6	08
11.	Applications	6	10
	TOTAL	64	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
NAME OF COURSE: **COMPUTER NETWORKS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

COURSE CONTENT

Lectures: 4 Hrs. per week

S. NO.	Course Content	Hours of Study
1.	INTRODUCTION & REVIEW Review of network models: OSI, TCP/IP Internet architecture. Interconnection through IP counters	4
2.	INTERNET ADDRESSES IP addresses Network and broadcast addresses Internet addressing technology : Advantages and Disadvantages Dotted decimal notation Loop back addresses	6
3.	ARP/ RARP Address resolution problem Resolution through : Direct mapping, Dynamic binding Reverse address resolution protocol	6
4.	INTERNET PROTOCOL Virtual Network Connectionless delivery system Datagram Format: Datagram size, Network MTU and Fragmentation, Timestamp Option IP Routing Algorithm ICMP: Introduction , Message Format, Ping	8
5.	SUBNET & SUPERNET ADDRESS EXTENSION Proxy ARP Subnet Addressing Subnet Mask Supernet Addressing	6

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
NAME OF COURSE: **COMPUTER NETWORKS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

Lectures: **4** Hrs. per week

COURSE CONTENT

S. NO.	Course Content	Hours of Study
6.	UDP & TCP	8
	Introduction to User Datagram Protocol	
	Format of UDP Message	
	Pseudo Header	
	Multiplexing & Demultiplexing	
	Introduction to Transmission Control Protocol	
	Ports, Collections And Endpoints	
	TCP Segment Format	
	Checksum Computation	
	Establishing a TCP Connection	
7.	ROUTING	4
	Vector Distance	
	Gateway-To-Gateway Protocol(GGP)	
	Routing Information Protocol(RIP)	
	Open SPF Protocol	
8.	INTERNET MULTICASTING	4
	H/w Broadcast	
	H/w Multicast	
	IP Multicast & Address	
	Mapping IP Multicast to Ethernet Multicast	
	IGMP and Message Format	
9.	SOCKET INTERFACE	6
	Creating a Socket, Specifying Local Address	
	Sending, Receiving data	
10.	DOMAIN NAME SYSTEM (DNS)	6
	Mapping DNS Addresses	
	DNS Resolution	

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
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SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

COURSE CONTENT

Lectures: **4** Hrs. per week

S. NO.	Course Content	Hours of Study
	Domain Server Message Format	
11.	APPPLICATIONS Telnet FTP Future of TCP/IP	6

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
NAME OF COURSE: **COMPUTER NETWORKS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

LIST OF EXPERIMENTS

Practical: **2** Hrs. per week

S. NO.	Name of experiments	Hours of Study
1.	Use IP addressing in networking	4
2.	Design a network system for an organisation with TCP/IP network using a. Class A address b. Class B address c. Class C address	12
3.	Write a program for demonstrating – a. Telnet b. FTP c. Ping	8
4.	Use Socket Programming for : a. Client b. Server	8
	Total	32

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **604**
NAME OF COURSE: **COMPUTER NETWORKS**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5024**

REFERENCES

TEXT BOOKS:

- Douglas E. Comer, 2001, Internetworking With TCP/IP, Volume-I, Third Edition, PHI New Delhi.

REFERENCE BOOKS:

- W. Richard Stevens, TCP/IP Illustrated, Volume-1, Addison –Wesley.
- Andrew S. Tanenbaum, 2001, Computer Networks, PHI New Delhi.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **E-COMMERCE**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5025**

RATIONALE

Electronic commerce is one of the most common business terms in use as we embark on the 21st Century. E-commerce is a compact word for a wide array of interconnected business concepts, technologies & cultural phenomena.

The course covers both the theory & practice of doing business over the Internet & World Wide Web. The pervasive connectivity of the Internet & the attractive graphical user interface of WWW present enormous opportunities for business of all kinds. Together, the Internet and Web support growth opportunities in selling, customer relation ships product/service design, user support, geographic expansion, logistic & supply chain integration.

The course also covers the risks perceived in using E C tools & measures to counter these risks.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **E-COMMERCE**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5025**

SCHEME OF STUDIES

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

S. NO.	TOPIC	SCHEME OF STUDIES Hrs. of Study		
		Theory	Practical	Total
1.	Review of e-commerce	10	04	14
2.	IT strategy	08	04	12
3.	Inter organisational e-commerce	10	04	14
4.	e-commerce technologies	12	16	28
5.	e-commerce security	08	04	12
	Total	48	32	80

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **E-COMMERCE**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5025**

SPECIFICATION TABLE

Lectures: **3** Hrs. per week

S. NO.	TOPIC	LECT. HOURS	MARKS ALLOTTED (Approximate)
1.	Review of e-commerce	10	20
2.	IT strategy	08	20
3.	Inter organisational e-commerce	10	20
4.	e-commerce technologies	12	25
5.	e-commerce security	08	15
	Total	48	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **E-COMMERCE**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5025**

COURSE CONTENT

Lectures: 3 Hrs. per week

S. NO.	Course Content	Hours of Study
1.	REVIEW OF E-COMMERCE	10
1.1	Scope, definition, trade cycle, e-markets, electronics data interchange, e-commerce, e-customer relationship management (crm).	
1.2	Value chain- supply chain, porters value chain models, inter organisational value chains.	
1.3	Competitive advantages - competitive strategy, porter's model , first mover advantage, sustainable competitive advantage, competitive advantage using e-commerce, application of e-commerce and future trends.	
2.	IT STRATEGY Introduction, strategic implication of Information Technology, business environment, business capabilities, existing business strategy , inter organisation transaction- credit transaction, trade cycle, variety of transaction, strategy formulation and implementation, Planning e-commerce implementation and evaluation.	08
3.	INTER ORGANISATIONAL E-COMMERCE Introduction, Definition of EDI, Example of EDI, EDI Technology, Benefits of EDI, Standards for Communication implementation, Agreement , EDI Security, Purchasing on line, On line after sales support.	10
4.	E-COMMERCE TECHNOLOGIES E-shopping, Internet banking, virtual auction, e-visibility, online payments, delivery of the goods, after sales service, advantages and disadvantages of consumer e-commerce, web site evaluation model.	12
5.	E-COMMERCE SECURITY Public key infrastructure, digital certification, digital signature.	08

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **E-COMMERCE**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5025**

LIST OF EXPERIMENTS

Practical: **2** Hrs. per week

S. NO.	Name of experiments	Hours of Study
1.	Case Study of one of the popular e-commerce application: Example: Airline Booking System, Web Booking System, online share dealing etc.	08
2.	Develop a small e-commerce application.	24

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **E-COMMERCE**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5025**

REFERENCES

TEXT BOOKS:

- David Whitely (2002), e-Commerce Strategy, Technologies & Applications, Tata McGraw Hills Edition.

REFERENCE BOOKS:

- Faisal Haque, e-enterprise business models, architecture and components, SIGS books.
- Daniel Minoli, Emma Minoli (1999), Web commerce technology handbook, Tata McGraw Hill edition.
- Napier, Judd, Rivers and Wagner, Creating a winning e-business, Vikas Publishing House Pvt. Ltd.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **DATA WARE HOUSING & DATA MINING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5026**

RATIONALE

A data warehouse is a central store of data that has been established for operational efficiency. The information in a data warehouse is subject oriented, non-volatile and of historic nature, so data trend contains extremely large data sets. The combination of data warehouse, decision support and data mining indicate an innovative and totally new approach to information management, Until now information system have been built and operated mainly to support the operation process of an organisation.

This course explores the concepts and techniques of Data Mining. Data Mining is a multi-disciplinary field. It focuses on issues related to the feasibility, usefulness, efficiency and scalability of techniques for the large databases.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **DATA WARE HOUSING & DATA MINING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5026**

SCHEME OF STUDIES

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

S. NO.	TOPIC	SCHEME OF STUDIES Hrs. of Study		
		Theory	Practical	Total
1.	Introduction	08	06	14
2.	Data ware House	10	08	18
3.	Data Pre-Processing	10	06	16
4.	Data Mining Primitives	10	06	16
5.	Application & trends in Data Mining	10	06	16
	Total	48	32	80

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **DATA WARE HOUSING & DATA MINING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5026**

SPECIFICATION TABLE

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

S. NO.	TOPIC	LECT. HOURS	MARKS ALLOTTED (Approximate)
1.	Introduction	08	20
2.	Data ware House	10	20
3.	Data Pre-Processing	10	20
4.	Data Mining Primitives	10	20
5.	Application and trends in Data Mining	10	20
	Total	48	100

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **DATA WARE HOUSING & DATA MINING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5026**

COURSE CONTENT

Lectures: **3** Hrs. per week

S. No.	Course Content	Hours of study
1.	INTRODUCTION	8
1.1	Concept & importance of Data Mining.	
1.2	Concept of Data Mining on various data types: Relational Database, Data ware House, Translation Database, Object Oriented Relational database.	
1.3	Data Mining functionality: Concept & class description.	
1.4	Classification of Data Mining.	
1.5	Major issues in Data Mining.	
2.	DATA WARE HOUSE	10
2.1	Concept & importance.	
2.2	Multi-dimensional Data WareHouse.	
2.3	Architecture.	
2.4	Implementation.	
3.	DATA PRE-PROCESSING	10
3.1	Need of Data Pre-processing.	
3.2	Data Cleaning.	
3.3	Data Integrity & Transformation.	
3.4	Data Reduction.	
3.5	Data Compression.	
4.0	DATA MINING PRIMITIVES	10
4.1	Data Mining Task.	
4.2	Data Mining Query Languages.	
4.3	GUI Based Data Mining Query Language.	
4.4	Architecture and Data Mining System.	

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **DATA WARE HOUSING & DATA MINING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5026**

COURSE CONTENT

Lectures: **3** Hrs. per week

S. No.	Course Content	Hours of study
5.	APPLICATION AND TRENDS IN DATA MINING	10
5.1	Data Mining applications.	
5.2	Data Mining system products and research prototype.	
5.3	Additional themes on data mining.	
5.4	Trends in data mining.	

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **DATA WARE HOUSING & DATA MINING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5026**

LIST OF EXPERIMENTS

Practical: **2** Hrs. per Week

S. NO.	Name of experiments	Hours of Study
1	Design a data mining system for a large database like : Reservation System, Banking System, Hospital Management System, University Examination System etc.	
2.	Describe the data Mining architecture of above data mining system.	
3.	Design a Data Warehouse for above data mining systems.	
4.	Create the DMQL Query for different tasks.	
	Total	**32**

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **DATA WARE HOUSING & DATA MINING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5026**

REFERENCES

TEXT BOOKS:

- Han & Kamber, Data Mining- Concept & Techniques, Harcourt India Pvt. Ltd., New Delhi.

REFERENCE BOOKS:

- Pieter Adrian, Dolf Zantinge, (2002), Data Mining, Pearson Education Asia.
- Peterson, (1999), Data Ware Housing & Data Mining, Wiley Eastern.
- Godbole A. S., (1996), Data Ware Housing & Data Mining, TMH, New Delhi.
- Milankovic, (1999), Data Ware Housing & Data Mining, TMH, New Delhi.
- Donavon & Mendric, Data Ware Housing & Data Mining, TMH, New Delhi.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **WINDOWS PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5027**

RATIONALE

With tremendous popularity, windows have become the Programming environments for the PC family of computers. Window demands a lot from programmers. The purpose of this course is to provide introduction to window programming. This course will also improve C and C++ programming skills, as windows make full use of above language.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **WINDOWS PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5027**

SCHEME OF STUDIES

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

S. NO.	TOPIC	SCHEME OF STUDIES Hrs. of Study		
		Theory	Practical	Total
1.	Introduction	04	02	06
2.	The Windows Architecture	04	02	06
3.	Input-Output Techniques	10	08	18
4.	Child And Popup Windows	10	06	16
5.	Windows control	04	04	08
6.	Dialog Boxes	04	03	07
7.	Disk File Access	04	03	07
8.	Printing	04	02	06
9.	Bitmaps	04	02	06
	Total	48	32	80

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **WINDOWS PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5027**

SPECIFICATION TABLE

S. NO.	TOPIC	LECT. HOURS	MARKS ALLOTTED (Approximate)
1.	Introduction	04	05
2.	The Windows Architecture	04	10
3.	I/O Techniques	10	20
4.	Child & Popup Windows	10	15
5.	Window Controls	04	12
6.	Dialog Boxes	04	10
7.	Disk File Access	04	08
8.	Printing	04	10
9.	Bitmaps	04	10
	Total	48	100

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SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **WINDOWS PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5027**

COURSE CONTENT

Lectures: 3 Hrs. per week

S. No.	Course Content	Hours of study
1.	INTRODUCTION Review of MS Windows and their basic operations, Working of windows programs. Structure of windows program, Code and resources. Compiling a Windows program, Linking. Memory models in windows. Hardware & Software requirement. Installation and setup options.	04
2.	THE WINDOWS ARCHITECTURE Concept of window class, Registering a window class, ICON handlers, Cursor handlers, Menu name, Window name, Creating a window, Draw styles, width, height etc. Concept of window messages, messages queue.	04
3.	I/O TECHNIQUES:: TEXT AND GRAPHICS OUTPUTS: Character mode, Graphics mode, Device context, Text output, Text formatting, Graphics output, Animated graphics. CHARACTER SET, FONTS, AND THE KEYBOARD : ANSI Character set, character functions, keyboard message processing, selecting fonts, using logical fonts, Graphics objects like Pen, brush etc.	10
4.	CHILD & POPUP WINDOWS Concept of child windows, creating a child window ,Child window controls, Popup windows	10
5.	WINDOW CONTROLS Types of window controls. Button class, Button messages, Push buttons, Check boxes, List box class, Radio buttons. Concept of scroll bars, Creation of scroll bars, Setting scroll bar- range and position.	04

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605**
NAME OF COURSE: **WINDOWS PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5027**

Lectures: **3** Hrs. per week

COURSE CONTENT

S. No.	Course Content	Hours of study
6.	DIALOG BOXES Working of dialog boxes, Designing a dialog box, Using a dialog box, Exchanging data with a dialog box, Model, Modeless and System model dialog box.	04
7.	DISK FILE ACCESS Access to windows disk files, various operations like create, open, read, write, close etc.	04
8.	PRINTING Printer support in windows, Printer device context, Sending special commands to a printer, Scaling a printer, Printer output, Getting information about a device.	04
9.	BITMAPS Store images in Bitmaps, Loading and Displaying a bitmaps, BITMAP data format, DIB format.	04

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **WINDOWS PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5027**

LIST OF EXPERIMENTS

Practical: **2** Hrs. per Week

S. No.	Name of experiments	Hours of study
1.	Write Window program to create a window, resizing a window create menu and display the messages within the window .	
2.	Write window program with the graphics drawing functions like those related to pens and brushes etc .	
3.	Write window program for creating list box, combo box , push buttons , check boxes , ready buttons , scroll bar within the window.	
4.	Write a window program to develop child -parent and popup windows.	
5.	Write window program for creating the different type of dialog boxes	
6.	Write window program for creating a disk file and their operations.	
7.	Write window program for various printing settings.	
8.	Write window program for bitmap, which includes programs icon file and any .bmp file as resource data.	
	Total	32

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE; **605 (ELECTIVE-III)**
NAME OF COURSE: **WINDOWS PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5027**

REFERENCES

TEXT BOOK:

- Jim Conger, Window programming premier plus, Galgotia Publication

REFERENCE BOOKS:

- Gonger, Windows API Bible, Galgotia Publications
- Lafore, Windows Programming Made Easy, Galgotia Publications

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **UNIX AND SHELL PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5028**

RATIONALE

UNIX is a more than just a computer system; it is philosophy of programming. Learning UNIX not involves familiarity with commands but also the methodology it employees. It is a very powerful tool for an experienced practitioner.

The content of the course enables the student to learn use of shell commands, utilities and system calls in multi-user and multi-tasking environment.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **UNIX AND SHELL PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5028**

SCHEME OF STUDIES

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

S. NO.	TOPIC	SCHEME OF STUDIES Hrs. of Study		
		Theory	Practical	Total
1.	Introduction to Operating Systems	02		
2.	Overview of UNIX Architecture	06		
3.	UNIX Editors and Basic UNIX Commands	10		
4.	Introduction to Shell Scripts	06	32	
5.	Awk Programming	06		
6.	Introduction to UNIX Internals	04		
7.	Introduction to System Administration	04		
8.	System Calls and C Function Library	10		
	Total	48	32	80

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

DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **605 (ELECTIVE-III)**
NAME OF COURSE: **UNIX AND SHELL PROGRAMMING**

SCHEME: Dip. IT_September 2000
COMMON WITH PROGRAMME (S):
PAPER CODE: **5028**

SPECIFICATION TABLE

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

S. NO.	TOPIC	LECT. HOURS.	MARKS ALLOTTED (Approximate)
1.	Introduction to Operating Systems	02	05
2.	Overview of UNIX Architecture	06	10
3.	UNIX Editors and Basic UNIX Commands	10	20
4.	Introduction to Shell Scripts	06	15
5.	Awk Programming	06	15
6.	Introduction to UNIX Internals	04	10
7.	Introduction to System Administration	04	10
8.	System Calls and C Function Library	10	15
	TOTAL	48	100

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COURSE CONTENT

Lectures: **3** Hrs. per week

S. No.	Course Content	Hours of study
1.	REVIEW OF UNIX OPERATING SYSTEMS	2
1.1	The operating system as an extended machine and as a resource manager.	
1.2	History of operating systems	
1.3	Operating system concepts processes, files, the shell	
1.4	Operating system structure: monolithic system: layered systems, virtual machines, client server model.	
2.	OVERVIEW OF UNIX ARCHITECHTURE	6
2.1	Kernel: Processes; Time sharing	
2.2	Shell	
2.3	Files and Directories	
2.4	Creation of a file	
2.5	Inode numbers and filenames	
2.6	File security, file systems	
2.7	Peripheral devices as files	
3.	UNIX Editors and Basic UNIX Commands	10
3.1	ed editor	
3.2	vi editor	
3.3	Redirections, piping, tees, filters	
3.4	UNIX utilities: grep, sed, awk, tr etc.	
4.	INTRODUCTION TO SHELL SCRIPTS	6
4.1	Bourne shell	
4.2	C Shell	
4.3	Shell variables, scripts, meta-characters and environment	
4.4	'If' and 'case' statements	
4.5	For, while and until loops	

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S. No.	Course Content	Hours of study
5.	AWK PROGRAMMING	6
5.1	Awk: pattern scanning and processing language	
5.2	BEGIN and END patterns	
5.3	Awk arithmetic and variables	
5.4	Awk built-in variable names and operators	
5.5	Arrays, strings	
6.	INTRODUCTION TO UNIX INTERNALS	4
6.1	Process management	
6.2	Memory management	
6.3	Files and directory structure	
6.4	Security	
7.	INTRODUCTION TO SYSTEM ADMINISTRATION	4
7.1	The System Administration: need and role	
7.2	Function of a System Manager	
7.3	Practical aspects of System Administrator	
8.	SYSTEM CALLS AND 'C' FUNCTION LIBRARY	10
8.1	Unix system calls	
8.2	'C' library function and math library	
8.3	Standard I/O package	
8.4	File handling	
8.5	Command line parameters	
8.6	UNIX - 'C' - interface	
8.7	'C' files	
8.8	Graphics	

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LIST OF EXPERIMENTS

Practical: **2** Hrs. per Week

S. No.	Name of experiments	Hours of study
1	Directory related commands, file related command.	
2	Vi editor, cat editor.	
3	Uses of some filters, pipes and redirection and tee.	
4	System calls of process, files, kill, fork-join etc.	
5	Using utilities: grep, set, awk, tr, sysadm etc.	
6	Writing shell scripts.	
7	Simple 'C' programming to use system calls.	
	TOTAL	32

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REFERENCES

TEXT BOOKS:

- B V Kernigham & R Pike, 1995, The UNIX, Programming Environment, Prentice Hall of India.
- S Prata, Advanced UNIX- A Programmer's Guide, BPB Publication, New Delhi.

REFERENCE BOOKS:

- A S Tanenbaum, Modern Operating Systems, Prentice Hall of India, New Delhi, 1995.
- UNIX System Manuals.
- Maurice J Bauch, Design of UNIX Operating Systems, Prentice Hall of India.

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DIPLOMA IN INFORMATION TECHNOLOGY

SEMESTER: **SIXTH**
COURSE CODE: **606**
NAME OF COURSE: **PROFESSIONAL ACTIVITIES**

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

Practical Hours: **2** Hrs. per week

RATIONALE

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 code106 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.

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/eminent 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.

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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.).

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

Grades	Level of performance
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 assessments 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.

J) 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.

These activities should preferably be conducted in English language to maintain continuity and provide reinforcement to skill development process.

Small groups shall be formed like in tutorials, group discussion, case studies, seminar, project methods, games, role-play & simulation to make the development of personality affective.

Treatment of P.A. demands special efforts, attention, close- co-operation 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, 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.

APPENDIX-I 16/11/5

RESOURCE REQUIRMENTS FOR CONDUCTING DIPLOMA IN INFORMATION TECHNOLOGY ~~16/11/4~~

A) HARDWARE REQUIREMENTS:

S. No.	Description	Approximate price* (In rupees)
1.	Server for WIN NT	1,25,000
2.	Server for LINUX/UNIX	1,25,000
3.	Hubs 30 port (Minimum)	10,000
4.	Cable Cat 5, 1 Bundle	2,000
5.	Connectors, 100 Nos.	800
6.	Modems	3,500
7.	Workstation-1 no. for every 2 students	@ 50,000 per work station
8.	Scanner	8,000
9.	Printers: Laser- 1no. Inkjet- 2 no. (@5,000 per printer) DMP - 3 no. (@10,000 per printer) (Dot Matrix Printer)	30,000 10,000 30,000
10.	CD writer (16X or higher)	10000
11.	LCD Projector	2,50,000
12.	UPS 2 KVA - 2 nos. (@10,000 per UPS)	20,000
13.	Miscellaneous	10,000
14.	Air Conditioners - 4 nos.	1,20,000
15.	Vacuum Cleaner	15,000

B) SOFTWARE REQUIRMENTS:

LATEST VERSION OF THE SOFTWARE SHOULD BE PURCHASED

S. No.	Description	Approximate price* (In rupees)
1.	WINDOWS (Latest edition)	7,000
2.	WIN NT, Server 5 clients	32,000
3.	M. S. Office- Professional edition	22,000
4.	AutoCAD (Professional)	90,000
5.	PageMaker	38,000
6.	CorelDraw	27,000
7.	Adobe PhotoShop	42,000
8.	Compiler for Turbo C++	8,000
9.	Visual Studio- Professional (Latest edition)	45,000
10.	Oracle- Standard	16,000
11.	SQL Anywhere 5.5, 4 user	23,500
11.	Hardware Diagnostic Software	10,000
12.	Tally	23,000
13.	Anti Virus software (Norton V 8.0) (For DOS/WIN/WIN 95/NT CD)	12,000
14.	Animation software (Flash and Dream Weaver)- Latest edition	50,000

- The list shows approximate price of the items at the time of preparation of list, institutions are advised to consult latest prices before buying or recommending any of the items listed above.
- The list shows minimum number of hardware/software items required to run a Diploma programme in Information Technology, institutions may add certain items to provide more skills to the students, depending on the current requirements of Information Technology industries

APPENDIX-II

Proforma: 1

(Feedback regarding curriculum of the Diploma Programmes presently being conducted in your institution)

Note: 1) Please use separate sheet for each diploma programme.
2) Please give component-wise feedback, use additional sheets if the space is short.

Name of the Diploma Programme	Scheme MPECS/ Semester/ Year	Duration	Year of implementation in your institution	Comments on curriculum document		
				Scheme of Studies	Scheme of Examination	Industrial training(In-plant training)/Vocational training/Practical training component etc.

Proforma : 2

Course-wise feedback regarding existing diploma programme

Name of Diploma programme:

S. No.	Name of Subject/Course/ Laboratory	Name of Topic/ Laboratory Experiments	Addition/ Deletion	Content	Remarks