



Dr. MGR Educational and Research Institute

(Deemed University)

MHRD, Govt Notification No.F.9-1/2002-U.3 dt. 21.01.2003 and UGC Notification F.6.6/2002(CPP-I) dt. 13.03.03

Off-Campus Study Centres at

Deccan Institute of Advanced Studies (DIAS)

(An ISO 9001:2000 Institution)



● Bangalore ● Hosur ● Madurai ● Hubli-Dharwad ● Tirupati ● Hyderabad ● Vijayawada ● Rajahmundry ● Visakhapatnam ● Thiruvananthapuram

CHANCELLOR'S MESSAGE



In the new millennium, great changes are envisaged the world over in the field of education to meet the forthcoming challenges in the ever expanding and fast developing Professional Fields. A larger autonomy is required for the educational institutes involved in higher education to redesign academic programs to include innovation, creative design and research components, which are the needs of the hour. We are proud to state that the Ministry of Human Resource Development, Government of India and University Grants Commission have declared Dr. M.G.R. Educational and Research Institute as a Deemed University from this academic year, 2003-2004, to design and introduce professionally valuable and socially relevant educational and research programs in Engineering, Technology, Medicine, Dentistry, Humanities and Sciences. Our university will focus on turning out many job creators and wealth generators from our students through our nation and to compete globally. We will strive to become a center of excellence. Now we dedicate ourselves to meet the vision of India as one among the well developed nations.

- Chancellor

MISSION

Our Students are to be the Job creators and not the Job seekers.

VISION

Creation of the centre of Excellence for Quality Education and Research in the fields of Science, Engineering, Technology, Medicine & Humanities to inculcate Technological and Competence of the students with Humane Dignity and Discipline.

VALUES

Academic integrity, morality and accountability!
Attention to various issues of national relevance as well as of global concern!
Appreciation of intellectual excellence and innovation & creativity!
An unfettered spirit of exploration, progress, rationality and enterprise!



**UNIVERSITY GRANTS COMMISSION
BAHADUR SHAH ZAFAR MARG, NEW DELHI - 110 002.**

F.6-6 / 2002 (CPP-I) 13 March, 2003

NOTIFICATION

In exercise of the powers conferred by Section-3 of the University Grants Commission Act, 1956 (3 of 1956), the Central Government, on the advice of the Commission, had declared Dr. M.G.R. Educational and Research Institute, Chennai comprising of the following two institutions as Deemed to be University for the purpose of the aforesaid Act with effect from 21st January, 2003 subject to a review after 3 years vide its Notification No. F.9-1/2002-U.3 dated 21st January, 2003.

- i) Thai Moogambigai Dental College and Hospital, Chennai; and
- ii) Dr. M.G.R. Engineering College, Maduravoyal, Chennai.

The grant of provisional status of Deemed to be University to **Dr. M.G.R. Educational and Research Institute, Chennai** is subject to the conditions that:

- i) It will adhere to the guidelines / instructions issued by UGC & AICTE from time to time as applicable to the Deemed Universities;
- ii) The institute will start :
 - a) PG Programmes in all major departments and augment its research activities and industry linkages;
 - b) Apply, obtain and pursue a few R&D project funded by Government S&T Departments / Agencies;
 - c) Set up an effective industry-institution interaction to facilitate improved campus placement and consultancy activities;
 - d) Launch a vibrant faculty development programme;
 - e) Strengthen the basic science departments to encourage PG education and research in basic science; and
 - f) Introduce courses in "Entrepreneurship" for UG / PG students to be in line with its mission of educating the job creators.

Sd/-
(Sharonjit Singh)
Deputy Secretary

**PUBLISHED IN THE GAZETTE OF INDIA PART-I SECTION
No. F.9-1/2002 - U3
Government of India
Ministry of Human Resource Development
Department of Secondary & Higher Education**

Shastri Bhavan, New Delhi,
21 January, 2003

NOTIFICATION

In exercise of the powers conferred by Section 3 of the University Grants Commission Act, 1956 (3 of 1956), the Central Government, on the advice of the University Grants Commission, hereby / declares the Dr. M.G.R. Educational and Research Institute, Chennai comprising of the following two institutions as Deemed to be University for the purpose of the aforesaid Act with immediate effect subject to a review after three years:

- i) Thai Moogambigai Dental College and Hospital, Chennai; and
- ii) Dr. M.G.R. Engineering College, Maduravoyal, Chennai.

Sd/-
(S.P. Gaur)
Joint Secretary to the Government of India

The Manager,
Government of India Press,
Faridabad (Haryana).

Copy forwarded for information to :

1. The Secretary, University Grants Commission, New Delhi.
2. Chairman, Dr. M.G.R. Educational and Research Institute, 121, G.N. Chetty Road, T.Nagar, Chennai - 600 017.

The grant of provisional status of Deemed to be University to **Dr. M.G.R. Educational and Research Institute, Chennai** is subject to the conditions that:

- i) It will adhere to the guidelines / instructions issued by UGC & AICTE from time to time as applicable to the Deemed Universities;
- ii) The institute will start :
 - a) PG Programmes in all major departments and augment its research activities and industry linkages;
 - b) Apply, obtain and pursue a few R&D project funded by Government S&T Departments / Agencies;
 - c) Set up an effective industry-institution interaction to facilitate improved campus placement and consultancy activities;
 - d) Launch a vibrant faculty development programme;
 - e) Strengthen the basic science departments to encourage PG education and research in basic science; and
 - f) Introduce courses in "Entrepreneurship" for UG / PG students to be in line with its mission of educating the job creators.

Dr. MGR Educational and Research Institute (Deemed University)

INTRODUCTION

In this millennium, rapid changes are taking place worldwide in the field of education. Moreover varying demands and challenges are posed to professional practices due to globalisation of economy and technological advancement.

Dr. MGR Educational and Research Institute, a Deemed University (hereafter called **Dr. MGR Deemed University**) was established in the year 2003 as per Ministry of Human Resource Development, Government of India Notification No.F.9-1/2002-U.3 dated 21.01.2003 and University Grants Commission (UGC) Notification F.6.6/2002 (CPP-I) dated 13.03.03 to provide Higher Education in Engineering, Technology, Medicine and Dentistry, Humanities and Sciences to meet the current and projected needs of the society. Besides promoting research and dissemination of knowledge, the university fosters co-operation between academic, industrial and medical communities the world over, with special focus on innovation, creative product design and high quality service through various extension activities and application-oriented education programmes in emerging areas, which are relevant and useful to various developmental sectors and to the society in general.

UNIVERSITY OBJECTIVES

Centre for industry-Institution Interface-for placement	Competency based education and training
Continuous improvement of quality of education and research	Continual upgradation of knowledge, skills and attitude
Focus on appropriate technology relevant to society	Optimal utilization of available resources.
Promotion of teamwork and innovation	Total involvement of faculty, students and administration.

The University aims to train and develop students into integrated individuals, capable of making significant contribution towards meeting the developmental needs and priorities of the nation and inculcate tangible and perceivable values to make them appreciate high ethical standards in personal, social and public life and reach the highest level of humanity such that they will always uphold and promote good social order and be readily willing to work for the uplift of the needy and the underprivileged. Moreover it seeks to create an enriched, more prosperous and sustainable society for the entire humanity.

NEW EDUCATION PHILOSOPHY

The university education is designed based on the flexible credit system, with high standards so that the character and personality of the students would be developed with strong knowledge base and skill inputs to face challenges in real life.

LIBRARIES

The University has two central Libraries with 50,000 volumes of books and 1000 journals, CDs and Videos on various disciplines of Engineering, Technology, Science, Management and Medicine. The Libraries are taken care by 6 Librarians and 10 assistants.

UNIVERSITY GOVERNANCE

The University was established by its Founder-Trustee Thiru. AC Shanmugam, BA, BL, an Ex MLA and an Ex MP on 28.03.2002 as an Educational Trust in the name of Dr. MGR Educational and Research Institute (Deemed University) located at Maduravoyal, Chennai - 600 095, with the Administrative Office at No. 22, GN Chetty Road, T. Nagar; Chennai - 600 017, mainly with an aim to promote higher levels of learning and develop professional competence through education and research in Engineering, Technology, Science, Medicine & Dentistry and Humanities. The University is governed by a Board of Management under the Chairmanship of the Chancellor, Thiru. AC Shanmugam, BA, BL, an Ex MLA, and an Ex MP.

HIGHLIGHTS

Admissions are done on All India basis like the IITs and NITs and Central Universities Education emphasizes in developing Job Creators Flexible Credit System based UG/PG Programmes Dual Degree options Location in the City limits of Chennai close to IIT, Anna University, CLRI, CSIR Laboratories, Industries and Hospitals Courses are approved by All India Council for Technical Education(AICTE), Dental Council of India(DCI) and Council of Architecture(COA) Courses accredited by National Board of Accreditation (NBA) of AICTE Scholarships for meritorious students Adequate Hostel and Transport facilities provided Strong interaction with industries and R&D established. Placement and Continuous Education facilities More accessibility to students through Off-Campus Study Centres established in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu.

CENTRE FOR INDUSTRY INSTITUTE INTERFACE

The successful professional education depends on very close knit and interaction of the institution with industries for curriculum design, training, placement, research, development and project work. R&D activities at industries shape the progress of the industries and the economy of nation as a whole. The institution's involvement with industrial R&D brings better results. A healthy exchange of faculty and professionals in industries are being arranged to utilize the expertise in the respective fields. The University has cooperation agreement with IIT, other educational institutions, R&D establishments and reputed industries.

Dr. MGR Educational and Research Institute has entered into MOU with more than 25 industries and institutes and a Centre for Industry Institute Interface has been established exclusively for this purpose with funding from AICTE for relevant project proposals.

RESEARCH

All the departments of Engineering, Technology, Science, Management and Medicine & Dentistry have established facilities and sophisticated equipment for pursuing research work leading to M.S. or Ph.D. degree. M.S. program is by research with duration of two years and Ph.D. program is for a minimum period of three years with one year of course study.

INDUSTRIAL VISITS / PROJECTS / SEMINAR / GUEST LECTURES / VISITING FACULTY / EXAMINERS

The Network of various professional societies, Leading educational institutions, R&D Establishments and Industries are identified for the purpose of Industrial Visits / Projects / Seminar / Guest Lectures / Visiting Faculty / Examiners to benefit our students.

Foundation for Educational Excellence (FEE)

Foundation for Educational Excellence (FEE), Bangalore is providing knowledge and expertise to Educational Institutions, Industries and R&D Organisations. FEE has networked with leading professional bodies of the country, promoting critical technologies and inter disciplinary approach to various R&D issues. Q-Ex (Quality Excellence) is a division of FEE is the leading provider of Quality Management System consultancy, documentation, training and software, to educational institutions, industries and other service sectors. Deccan Institute of Advanced Studies (DIAS) promoted by FEE is managing the Off-Campus Study Centres of Dr. MGR Educational and Research Institute - Deemed University (Dr. MGR Deemed University), Chennai, which offers PG Programmes at various places.

Deccan Institute of Advanced Studies (DIAS)

Rapid development in science and technology make it imperative that the education of professional be continued over their entire career rather than be restricted to vocational period(s) of time. What is needed is a complete integration of education with work during their productive years, which will be required and adequate to help them cope with new demands. The Deccan Institute of Advanced Studies (DIAS) has evolved several mechanisms to make the expertise and facilities available to qualified technical people in Industries, Universities and Research Establishments. Since, what was started on an experimental basis has proved to be extremely popular and has attracted the attention of academicians and professionals, DIAS then, with MGR Educational and Research Institute (Deemed University) opened study centres at different places with the objective of providing a sustained and rigorous education by programmes offering courses on subjects of topical interest to students and working professionals in Biology, Engineering, Technology, Medicine and Management.

Dr. MGR Educational and Research Institute (Deemed University) has entered into a MoU with Deccan Institute of Advanced Studies (DIAS) of Foundation for Educational Excellence (FEE) to run the Off-Campuses of Dr. MGR Deemed University at Bangalore, Hubli-Dharwad, Hosur, Madurai, Hyderabad, Rajamundry, Tirupati, Vijayawada, Visakhapatnam, Thiruvananthapuram and other places.

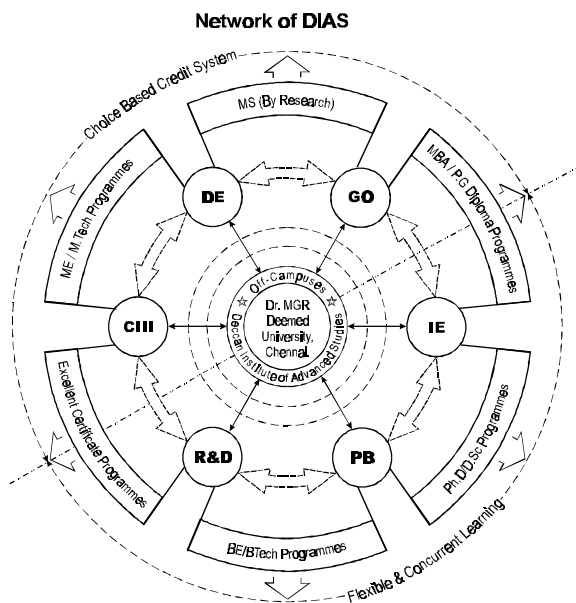
Dr. MGR Educational and Research Institute (Deemed University)		Deccan Institute of Advanced Studies
Shri. A.C. Shanmugam Chancellor	Dr. E.C.G. Solomon Dean (Medicine and Dental Sciences)	Dr. T.R.S. Chouhan Dean (Academic Research)
Padmashri Prof. R.M. Vasagam Vice-Chancellor	Dr. T. Chandralekha Dean (Humanities and Sciences)	Dr. K. Gopalakrishnan Dean (Academic Courses)
Dr. P.T. Manoharan Adviser	Shri. J.P. Rajapandian Registrar	Dr. L.V. Muralikrishna Reddy Dean (Institute-Industry-Partnerships)
Dr. V. Srinivasagopalan Adviser	Prof. R. Kalavathy Joint Registrar (Finance)	Dr. Srinivasa Lingireddy International Co-ordinator, University of Kentucky, USA.
Prof. R. Bhavani Shankar Dean (Coordination, Planning and Development)	Prof. Job Kuruvilla Joint Controller of Examinations	Prof. U. Chandrasekar Advisor, DIAS & Co-ordinator, RPSI
Dr. P. Aravindan Dean (Engineering and Technology)	Prof. R. Thirumalai Joint Registrar of Purchase & Stores	Prof. V. Ravichandra Director (Admissions)

DIAS NETWORK

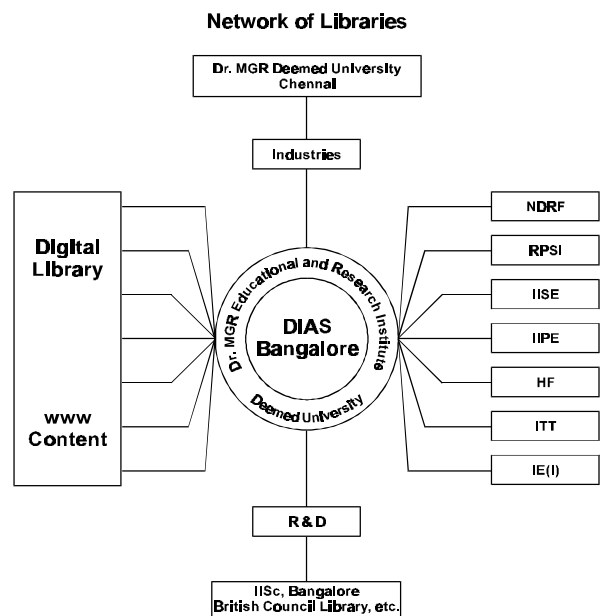
DIAS has already associated with number of professional bodies within India and outside the country for excellence in academics. This association in turn benefits large number of students and working professionals for their endeavors. These professional bodies already established strong network with hundreds of organisations. The major benefits expected from these organisations to our students are unlimited, such as project works, seminars, industrial visits, placements, hands on practical exposure etc. Some of the industries, R&D establishments and professional bodies are listed below.

3D Product Development (3DPD) Accell IT Academy Advance Electronic Instruments Aeronautical Development Agency (ADA) Aeronautical Development Establishment (ADE) Aeronautical Research and Development Board (ARDB) Aeronautical Society of India (ASI) Allied Electronics Mfg. Co APEX Mgt. Consulting Group Pvt. Ltd APM Technologies Aquasoub Engineering Ashok Leyland Association of Machines and Mechanism (AMM) ATTIT Pvt. Ltd Bajaj Auto Ltd Tata – ASL Bangalore's Industries Associations Bharat Earth Movers Ltd (BEML) Bharat Electronics Ltd (BEL) Bharat Heavy Electricals Ltd (BHEL) bigtec Pvt. Ltd B.I.T, Mesra British Safety Council CADD Centre CEERI Unit CMERI Center for DNA Fingerprinting and Diagnostics (CDFD) Central Glass and Ceramic Research Institute (CGCRI) Centre for Advanced Technology Centre for Air Bone Systems (CABS)

Centre for Cellular Molecular Biology (CCMB) Centre for Environmental Studies, Anna University Centre for Food Technology Research Institute (CFTRI) Central Manufacturing Technology Institute (CMTI) Confederation of Indian Industries (CII) Craftech Private Ltd Crown Lubricants DEAL Defence Bio-Engineering Laboratory (DEBEL) Defence Research Development Establishment (DRDE) Defence Research Development Laboratory (DRDL) Dhanalaxmi Packaging Industries Empire Machine Tools Engineering Mechanics Research India Pvt. Ltd Electronics and Radar Development Establishment (LRDE) G - Plast G.R. Fibre Glass Governemnt Tool Room and Training Centre (GTTC) Gas Turbine Research Establishment (GTRE) GE Power Controls India Pvt. Ltd Gladiola Network Systems GPM Technology Hindustan Aeronautical Ltd (HAL) Himabindu Foundation (HF) Hindustan Machine Tools (HMT) Hosur Industries Association Indian Environmental Association Indian Institution of Production Engineers (IPE) Indian Institute of Science (IISc) Indian Institute of Safety and Environment (IISE) Indian Society for Smart Structures (ISSS) Infosolutions Innovative Technology Transfer (ITT) Institute for Embedded Solutions (IES) Indian Society for Training and Development (ISTD) Indian Telephone Industries Ltd (ITI) J.X.Enterprises Jawaharlal Nehru Centre for Advanced Scientific Research Joint Advanced Technology Programme (JATP) Kanchan Enterprises Zeonics Pvt. Ltd Kirloskar Brothers Ltd Kruthi Computers Service Pvt. Ltd Leading Edge Marketing LOA Engg Services Loss Prevention Association of India Machine Tools Aids Bureau Mahindra Ltd Maini Precision Products Pvt. Ltd Manipal Heart Foundation Marco Polo Micro Genesis CAD Soft Mishra Dhatu Nigam Ltd Mistral Solutions Pvt. Ltd Molecular Research Center (MRC) National Aerospace Laboratory (NAL) National Design and Research Forum(NDRF) National Institute of Advanced Studies (NIAS) NIIT Ltd National Institution for Quality & Reliability National Safety Council Naval Material Research Laboratory (NMRL) Nidhi Manufacturing Company Nettur Technical Training Foundation (NTTF) Optiwave Photonics Paradyze Technologies Peacock Design Polynex Quality Excellence (Q-Ex) R.K.R. Creations Rapid Prototyping Society of India (RPSI) Reliance Communications Pvt. Ltd Renishaw Research Centre Imart (RCI) RJP Infotek Rodrigues Ins.Tech. Rolta Royal Enfield Royalstar Sbyte Technologies Semiconductor Complex (SCL) Simulation Design (India) Pvt., Ltd SOA Instruments Pvt. Ltd Softcore Enterprises Pvt. Ltd Sterling Controls Stratasy TAFE Tamilnadu Pollution Control Board TATA Technologies Techno Enterprise Solutions Pvt. Ltd Techno Solutions Tata Engineering and Locomotive Company Ltd (TELCO) TVS Vantico Vectra Form Videocon International Limited Virtual e3d Whilpool India Ltd World Federation of Scientists (WFS) World Safety Council World Safety Team YEMEE Tooling Zetatek Zigma Software Ltd ZITI Technologies Ltd.

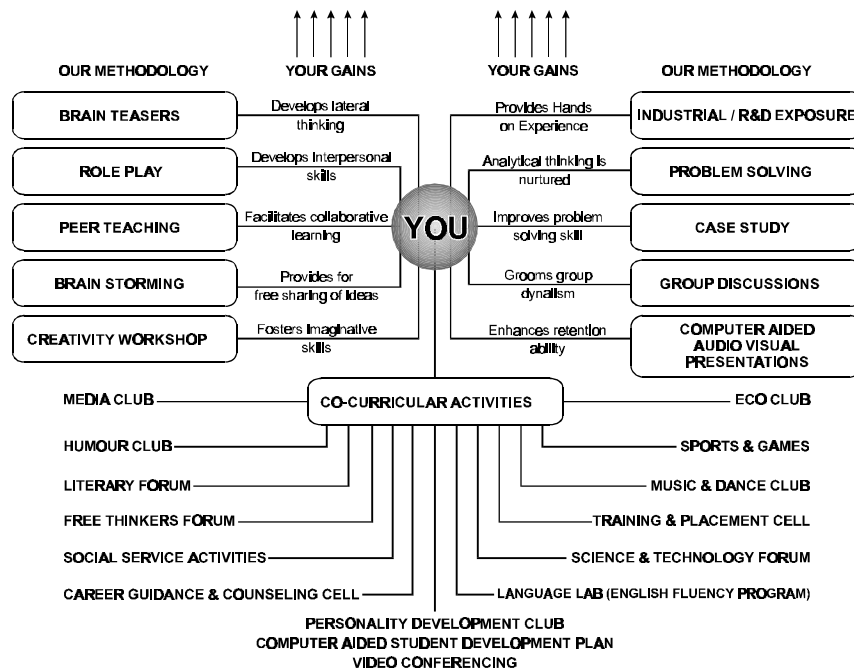


- DE - Defence Establishment
- CIII - Centre for Industry Institute Interface
- R&D - Research & Development Establishments
- GO - Government Oranisations
- IE - Industrial Establishment
- PB - Professional Bodies



Dr. MGR Deemed University and DIAS with its Off-Campus Study Centres are networked with various leading libraries situated at educational institutions, professional bodies and R&D establishments

Innovative Teaching Methodology At DIAS Off-Campus Study Centres of Dr. MGR Deemed University



Intellectual alertness, creativity and talent for innovation go into the making of an engineering & technology leader today and continue to be essential for professional competence tomorrow. The candidates selected or admission can use the most modern equipments and laboratory facilities available at various R&D establishments & industries and go through the specialised courses designed to meet the challenges of the present and future. The teaching methods rely on direct personnel contact between the faculty and the students. Studying in such an environment with people having similar goals and aspirations is an exciting experience during one's academic life and is of considerable value in one's professional career.

CREDIT SYSTEM

Education at the University is organised around the credit system of study. The prominent features of the credit system are process of continuous evaluation of a student's performance, and a flexibility to allow a student to progress at an optimum pace suited to his/her ability or convenience subject to fulfilling minimum requirement for continuation. Each course has a certain number of credits, which describe its weightage. The number of credits that he/she has completed satisfactorily measures a student's performance. A minimum Grade Point Average is required to be maintained for satisfactory progress. Also a minimum number of earned credits should be obtained in order to qualify for the degree.

METHODOLOGY		
Flexible Learning Environment	Regular Class Work during Day / Evening / Week End Supplemented with Seminars / Assignments / Case Studies / Industrial Visits / Industrial Report / Field Study Laboratory Mini Project Work Major Project Work(Thesis) Total minimum 450 hours or 90 days of working per Semester	Choice of Subjects / Courses Choice Based Credit System M.Tech = 75 Credits M.S (By Research) = 75 Credits MBA = 102 Credits
Practicals Laboratory Mini Project Work Major Project Work	Will be conducted at every Off-Campus Study Centres along with centralised laboratory classes at Bangalore based on the requirements Project Works will be done at various industries and R&D establishments at real life environment to get the hands on experience.	Better Institute-Industry-Partnerships
Attendance	Not less than 75% Attendance in each Semester taking into account the total number of periods in all Courses (Subjects) put together attended by the candidate as against the total number of periods in all course offered during that Semester.	Ensure minimum attendance requirement
Internal Assessment	Internal Evaluation will be based on the continuous assessment by the concerned faculty member based on the performance of the candidates at Tests, Assignments, Seminars, Group Discussions and Attendance.	50% weightage will be given for the Internal Assessment.
End Semester Examination	At the end of every semester there will be an end semester examination conducted by Dr. MGR Educational and Research Institute (Deemed University) at the Off-Campus Study Centres under its direct supervision and will be evaluated by external examiners.	For all P.G. courses double valuation will be done first by the internal faculty and second by the external faculty.
Award of Degree	Classification of Results and the Award of respective Degrees will be done by Dr. MGR Educational and Research Institute (Deemed University), Chennai for the successful candidates.	Award of Letter Grades

M.Tech Course Curriculum

for the following specializations

Bio-Environmental Systems Management, Bio-Systems Engineering, Biotechnology,
Construction Technology and Management, Design Engineering, Engineering Management,
Network Communications and Security, Product Design and Development, Quality Engineering and Management

For detailed Syllabus kindly refer www.diasindia.org

Subjects	Credits	1st Semester	2nd Semester	3rd Semester	4th Semester
Course Work	49	Six	Five	Three	---
Course	37	Six	Three	One	---
Electives	12	---	Two	Two	---
Practical	3	---	One	---	---
Seminars	2	One	One	---	---
Industrial Visit Report	2	---	---	Yes	---
Projects	(4+16=20)	---	Mini	Major-Part I	Major-Part II
Total Credits	76	22	26	16	12

STATE-OF-THE-ART CURRICULUM

The current curriculum at DIAS Off-Campus programmes are evolved by University by involving well experienced experts with the combination of Industry, R&D and Institute drawn from all over the country. University strongly feels that only the state-of-the-art curriculum will enhance the skills of education seekers. It is of no use to fully repeat the development process with respect to outdated and ill prepared curriculum that has already taken place elsewhere. Particular attention is given to the importance of maintaining a holistic view of curriculum and the need to integrate advanced knowledge, skills and values across specific learning areas. This curriculum attempts to facilitate fruitful use of these opportunities. The fundamental role of curriculum in the promotion of students' enjoyment of learning and excellence in learning is also emphasized. University describes learning and assessment strategies that are consistent with the Curriculum Framework and which promote achievement of the outcomes.

EXPERIENCED FACULTY

Our faculties are expert instructors with a Masters or PhD prepared in areas of research, practice and teaching. More importantly our faculty believes on continuous learning and overall development of students. Our faculty also specialised in take-up mentor activity.

M.Tech - Bio-Environmental Systems Management

	* L	T	P	C					
Semester 1					Industrial Project Report	-	-	4	2
Bio-mathematics	4	-	-	4	Main Project - Bio-environmental Systems - Part-I	-	-	8	4
Bio-process Engineering	4	-	-	4	Total			16	
Ecology, Energy and Environment Systems	4	-	-	4	Semester 4				
Environmental Microbiology	3	-	-	3	Main Project - Bio-environmental Systems - Part-II	-	-	24	12
Environmental Toxicology and Protection	3	-	-	3	Total			12	
Emerging Engineering Technologies	3	-	-	3	Electives: (Four)				
Seminar	-	-	2	1	Bioinformatics				
Total				22	Cleaner Production Techniques				
Semester 2					Pesticide Problems and Solutions				
Environmental Systems Modeling	4	-	-	4	Air and Water Quality Modelling				
Environmental Bio-technology	4	-	-	4	Solid and Hazardous Waste Management				
Environmental Impact Assessment	4	-	-	4	Environmental Management System				
Elective 1	3	-	-	3	Total Quality Management				
Elective 2	3	-	-	3	Knowledge Management				
Lab - Bio-environmental Engineering	-	-	6	3	Strategic Management				
Seminar	-	-	2	1	ERP, Logistics and Supply Chain Management				
Mini Project - Bio-environmental Analysis	-	-	8	4	Technical Entrepreneurship				
Total				26	Research Methodology				
Semester 3					Remote Sensing and GIS Applications in Environmental Engineering				
Environmental Legislation	4	-	-	4	Bio-conversion and Processing of Waste				
Elective 3	3	-	-	3	Biological Waste Treatment				
Elective 4	3	-	-	3	Environmental Research and Systems Analysis				

Eligibility : BE / BTech / AMIE (Any Branch), or Equivalent**, MSc (Any Relevant Branch) - Knowledge of Biology is essential

** Subject to the approval of University

* Abbreviations : L - Lecture hours T - Tutorial hours P - Practical hours C - Credit

M.Tech - Bio-Systems Engineering

	L	T	P	C				
Semester 1					Industrial Project Report	-	-	4 2
Bio-mathematics	3	1	-	4	Main Project - Bio-systems and Technologies - Part-I-	-	-	8 4
Bio-process Engineering	4	-	-	4	Total			16
Ecology, Energy and Environment Systems	4	-	-	4	Semester 4			
Bio-systems and Equipment	3	-	-	3	Main Project - Bio-systems and Technologies - Part-II-	-	-	24 12
Bio-thermodynamics	3	-	-	3	Total			12
Emerging Engineering Technologies	3	-	-	3	Electives: (Four)			
Seminar	-	-	2	1	Biotechnology Basics			
Total				22	Immunology			
Semester 2					Biological Waste Treatment			
Tissue Engineering	4	-	-	4	Environmental Microbiology			
Bio-sensor Technology	4	-	-	4	Cleaner Production Techniques			
Food Process Engineering	4	-	-	4	Pesticide Problems and Solutions			
Elective 1	3	-	-	3	Genetic Engineering			
Elective 2	3	-	-	3	Protein Engineering			
Lab - Bio-systems	-	-	6	3	Environmental Management System			
Seminar	-	-	2	1	Total Quality Management			
Mini Project - Bio-systems Analysis	-	-	8	4	Knowledge Management			
Total				26	Strategic Management			
Semester 3					Research Methodology			
Bioinformatics	4	-	-	4	Environmental Impact Assessment			
Elective 3	3	-	-	3	Environmental Systems Analysis			
Elective 4	3	-	-	3				

Eligibility : BE / BTech / AMIE (Any Branch), or Equivalent**, MSc (Any Relevant Branch) - Knowledge of Biology is essential

** Subject to the approval of University

M.Tech – Biotechnology

	L	T	P	C				
Semester 1					Industrial Project Report	-	-	4 2
Bio-mathematics	3	1	-	4	Main Project - Part-I	-	-	8 4
Bio-process Engineering	4	-	-	4	Total			16
Biotechnology Basics	3	-	-	3	Semester 4			
Bio-systems and Equipment	3	-	-	3	Main Project - Part-II	-	-	24 12
Bio-thermodynamics	3	-	-	3	Total			12
Biochemical Technology	4	-	-	4	Electives: (Four)			
Seminar	-	-	2	1	Food Process Engineering			
Total				22	Immunology			
Semester 2					Microbial Technology			
Tissue Engineering	4	-	-	4	Enzyme Technology			
Genetic Engineering	4	-	-	4	Biological Waste Treatment			
Molecular Biotechnology	4	-	-	4	Environmental Microbiology			
Elective 1	3	-	-	3	Protein Engineering			
Elective 2	3	-	-	3	Pesticide Problems and Solutions			
Lab - Biotechnology	-	-	6	3	Environmental Management System			
Seminar	-	-	2	1	Cleaner Production Techniques			
Mini Project - Biotechnology	-	-	8	4	Bio-conversion and Processing of Waste			
Total				26	Total Quality Management			
Semester 3					Knowledge Management			
Bioinformatics	4	-	-	4	Research Methodology			
Elective 3	3	-	-	3	Emerging Engineering Technologies			
Elective 4	3	-	-	3	Technical Entrepreneurship			

Eligibility : BE / BTech / AMIE (Any Branch), or Equivalent**, MSc (Any Relevant Branch) - Knowledge of Biology is essential

** Subject to the approval of University

M.Tech - Construction Technology and Management

	L	T	P	C					
Semester 1					Industrial Project Report	-	-	4	2
Applied Statistics and Queuing Theory	3	1	-	4	Main Project				
Construction Methods and Equipment	3	-	-	3	Construction Analysis and Management - Part -I	-	-	8	4
Smart Materials for Construction	3	-	-	3	Total				16
Project Formulation and Appraisal	3	1	-	4	Semester 4				
Construction Laws and Regulations	4	-	-	4	Main Project				
Emerging Engineering Technologies	3	-	-	3	Construction Analysis and Management - Part-II	-	-	24	12
Seminar	-	-	2	1	Total				12
Total				22	Electives: (Four)				
Semester 2					Maintenance and Rehabilitation of Structures				
Advanced Construction Techniques	3	1	-	4	Construction Economics and Finance Management				
Computer Applications in Construction Engineering and Planning	3	1	-	4	Management of Quality and Safety in Construction				
Construction Planning, Scheduling and Control	3	1	-	4	Environmental Impact Assessment				
Elective 1	3	-	-	3	Energy Conservation Techniques in Building Construction				
Elective 2	3	-	-	3	Quality Control and Assurance in Construction				
Lab - Computer Aided Management	-	-	6	3	Knowledge Management				
Seminar	-	-	2	1	Strategic Management				
Mini Project - Construction Audits	-	-	8	4	ERP, Logistics and Supply Chain Management				
Total				26	Environmental Management Systems				
Semester 3					Technical Entrepreneurship				
Construction Project Management	3	1	-	4	Total Quality Management				
Elective 3	3	-	-	3	Research Methodology				
Elective 4	3	-	-	3					

Eligibility : BE / BTech / AMIE (Civil), or Equivalent** or BArch

*** Subject to the approval of University*

M.Tech - Design Engineering

	L	T	P	C					
Semester 1					Industrial Project Report	-	-	4	2
Quantitative Techniques and Quality Tools	3	1	-	4	Main Project - Design and Development - Part-I	-	-	8	4
Concepts of Engineering Design	3	-	-	3	Total				16
Design for Manufacture and Assembly	4	-	-	4	Semester 4				
Materials, Manufacturing and Design	4	-	-	4	Main Project - Design and Development - Part-II	-	-	24	12
Computer Aided Design and Manufacturing	3	-	-	3	Total				12
Emerging Engineering Technologies	3	-	-	3	Electives: (Four)				
Seminar	-	-	2	1	Multi Optimization in Engineering Design				
Total				22	Engineering Design for Safety				
Semester 2					Tribology in Design				
Finite Element Analysis	4	-	-	4	Productivity Management and Re-engineering				
Product Life Cycle Management	4	-	-	4	Reverse Engineering				
Concurrent Engineering	4	-	-	4	Creativity and Innovation Management				
Elective 1	3	-	-	3	Product Design and Development Strategies				
Elective 2	3	-	-	3	Optimization Techniques				
Lab - FEA	-	-	6	3	Cleaner Production Techniques				
Seminar	-	-	2	1	Computational Fluid Dynamics				
Mini Project - Design Concepts	-	-	8	4	Rapid Prototyping and Development				
Total				26	Micro Fabrication				
Semester 3					Design Management				
Advanced Finite Element Analysis	3	1	-	4	ERP, Logistics and Supply Chain Management				
Elective 3	3	-	-	3	Total Quality Management				
Elective 4	3	-	-	3	Research Methodology				

Eligibility : BE / BTech / AMIE (Any Branch), or Equivalent**, MSc (Any Relevant Branch) - Knowledge of Mathematics Essential

*** Subject to the approval of University*

M.Tech - Engineering Management

	L	T	P	C					
Semester 1					Industrial Project Report	-	-	4	2
Quantitative Techniques and Quality Tools	3	1	-	4	Main Project - Design and Development - Part-I	-	-	8	4
Statistical Process Control	3	1	-	4	Total				16
Emerging Engineering Technologies	3	-	-	3	Semester 4				
Knowledge Management	3	-	-	3	Main Project - Design and Development - Part-II	-	-	24	12
Organizational Behavior and Leadership	3	-	-	3	Total				12
Engineering Economics and Financial Management	3	1	-	4	Electives: (Four)				
Seminar	-	-	2	1	Total Quality Management				
Total				22	Strategic Management				
Semester 2					Plant Engineering Management				
Optimization Techniques	3	1	-	4	ERP, Logistics and Supply Chain Management				
Product Life Cycle Management	3	1	-	4	Technical Entrepreneurship				
Concurrent Management	4	-	-	4	Reverse Engineering				
Elective 1	3	-	-	3	Lean Manufacturing				
Elective 2	3	-	-	3	E-commerce – Technology and Management				
Lab - Engineering Business	-	-	6	3	Infrastructure Management				
Seminar	-	-	2	1	Purchasing and Materials Management				
Mini Project - Survey and Analysis	-	-	8	4	Accounting for Management				
Total				26	Human Resource Management				
Semester 3					Project Management				
Marketing Research and Management	4	-	-	4	Research Methodology				
Elective 3	3	-	-	3	Production and Operations Management				
Elective 4	3	-	-	3	Product Design and Development Strategies				

Eligibility : BE / BTech / AMIE (Any Branch), or Equivalent**, MSc (Any Relevant Branch) - Knowledge of Mathematics Essential

** Subject to the approval of University

M.Tech - Network Communications and Security

	L	T	P	C					
Semester 1					Elective 4	3	-	-	3
Graph Theory and Queuing Theory	3	1	-	4	Industrial Project Report – Security Systems	-	-	4	2
Wireless Network Communications	3	-	-	3	Main Project - Network / Security - Design - Part - I	-	-	8	4
Software Engineering and Methodologies	3	-	-	3	Total				16
Computer Networks Engineering & Management	3	1	-	4	Semester 4				
Advanced Networks	4	-	-	4	Main Project - Network / Security - Design - Part - II	-	-	24	12
Emerging Engineering Technologies	3	-	-	3	Total				22
Seminar	-	-	2	1	Electives: (Four)				
Total				22	Advanced Data Bases				
Semester 2					Software Project Management				
Cryptography and Communication Network Security	3	1	-	4	Object Oriented System Analysis and Design				
Advanced Mobile Computing	3	1	-	4	Advanced Operating Systems				
Cyber Laws and Network Security Legislation	3	1	-	4	Telecom Network Management				
Elective 1	3	-	-	3	Advanced Digital Communication Techniques				
Elective 2	3	-	-	3	Advanced Digital Signal Processing				
Lab - Computer Networking & Security	-	-	6	3	Network Routing Algorithms				
Seminar	-	-	2	1	High Speed Switching Architecture				
Mini Project - Analysis of Networks	-	-	8	4	Simulation of Communication of Systems and Networks				
Total				26	Knowledge Management				
Semester 3					Total Quality Management				
Performance Evaluation of Computer Systems and Networks	3	1	-	4	Research Methodology				
Elective 3	3	-	-	3					

Eligibility : BE / BTech / AMIE (EEE, ECE, ICE, E&I, CSE), or Equivalent**, MCA, MSc (IT / CSc)

** Subject to the approval of University

M.Tech - Product Design and Development

	L	T	P	C					
Semester 1					Industrial Project Report	-	-	4	2
Quantitative Techniques and Quality Tools	3	1	-	4	Main Project - Design and Development - Part-I	-	-	8	4
Concepts of Engineering Design	3	1	-	4	Total			16	
Design for Manufacture and Assembly	4	-	-	4	Semester 4				
Materials, Manufacturing and Design	3	-	-	3	Main Project - Design and Development - Part-II	-	-	24	12
Computer Aided Design and Manufacturing	3	-	-	3	Total			12	
Emerging Engineering Technologies	3	-	-	3	Electives: (Four)				
Seminar	-	-	2	1	Elements of Design and Product Modeling				
Total				22	Product Design and Development Strategies				
Semester 2					Creativity and Innovation Management				
Finite Element Analysis	3	1	-	4	Applied Ergonomics				
Product Life Cycle Management	3	1	-	4	Micro Fabrication				
Rapid Prototyping and Development	3	1	-	4	Reverse Engineering				
Elective 1	3	-	-	3	Smart Materials and Manufacturing				
Elective 2	3	-	-	3	Methodology for Design Research				
Lab - Product Design Tools	1	1	2	3	Design and Analysis of Experiments				
Seminar	-	-	2	1	Design Management				
Mini Project - Design Projects	-	-	8	4	Computational Fluid Dynamics				
Total				26	Engineering Design for Safety				
Semester 3					Mechatronics				
Product visualization, Communication and Presentation	3	1	-	4	Lean Manufacturing				
Elective 3	3	-	-	3	Total Quality Management				
Elective 4	3	-	-	3	Knowledge Management				
					Research Methodology				

Eligibility : BE / BTech / AMIE (Any Branch), or Equivalent**, MSc (Any Relevant Branch), MBA, MCA* - Knowledge of Maths required

** Subject to the approval of University

M.Tech - Quality Engineering and Management

	L	T	P	C					
Semester 1					Industrial Project Report	-	-	4	2
Quantitative Techniques and Quality Tools	3	1	-	4	Main Project - Design and Analysis - Part-I	-	-	8	4
Statistical Process Control	3	1	-	4	Total			16	
Emerging Engineering Technologies	3	-	-	3	Semester 4				
Quality Engineering and Management	3	1	-	4	Main Project - Design and Analysis- Part-II	-	-	24	12
Total Productive Maintenance	3	-	-	3	Total			12	
Reliability Engineering	3	-	-	3	Electives: (Four)				
Seminar	-	-	2	1	Design and Analysis of Experiments				
Total				22	Human Aspects of Quality				
Semester 2					Software Quality Engineering and Management				
Quality by Design	3	1	-	4	Total Quality Management				
Optimization Techniques	3	1	-	4	Environmental Management System				
Quality Certification Systems	3	1	-	4	Knowledge Management				
Elective 1	2	1	-	3	Strategic Management				
Elective 2	2	1	-	3	ERP, Logistics and Supply Chain Management				
Lab - Quality Engineering	-	-	6	3	Quality Planning and Assurance Systems				
Seminar	-	-	2	1	Facilities Planning and Design				
Mini Project - Quality Audit	-	-	8	4	Advanced Manufacturing Systems and Modeling				
Total				26	Lean Manufacturing				
Semester 3					Six Sigma Concepts				
Systems and Simulation	3	1	-	4	Research Methodology				
Elective 3	2	1	-	3	Product Life Cycle Management				
Elective 4	2	1	-	3					

Eligibility : BE / BTech / AMIE (Any Branch), or Equivalent**, MSc (Any Relevant Branch), MBA, MCA* - Knowledge of Statistics required

** Subject to the approval of University

MS (By Research) Course Curriculum

MS (By Research) Programme is equivalent to ME / MTech Programmes

A BRIEF DISCRPTION OF THE PROGRAMME

Students will need to take six courses to earn minimum 20 credits. It is expected that the students will take their core courses within the first six months of their stay at the Off-Campus Study Centre. Students will be encouraged to select a research area as soon as possible, normally within the first year as per the advice of their Supervisor (Guide) who will guide the student through this area. It is expected that the research will be of substantial quality, leading to a good quality publication / patent / product. It is expected that the student will be able to finish all the requirements of course work and research within two years.

SPECIALISATION

- 1) Bioinformatics
- 2) Genetic Engineering
- 3) Protein Engineering
- 4) Tissue Engineering
- 5) Software Engineering
- 6) Power System
- 7) Industrial Engineering

SEMESTER - 1

Course Work from Core or Electives relevant to the specialisation
(subject to the approval of University)

**Six Course Work (Subjects)
20 Credits**

SEMESTER - 2

Practical / Seminars / Industrial Visit Report / Progress Review /
Research Problem formulation etc.

20 Credits

SEMESTER - 3

Thesis - 35 Credits

SEMESTER - 4

TOTAL 75 Credits (Equivalent to M.Tech Programme)

Course Work(s) can be chosen from the following list - (Appropriately to the MS(By Research) Specialisation)

LIST OF COURSES (CORE / ELECTIVES) from M.TECH Curriculum of the following Specialisations

Bio-Environmental Systems Management
Bio-Systems Engineering
Biotechnology
Construction Technology and Management
Design Engineering
Engineering Management
Network Communications and Security
Product Design and Development
Quality Engineering and Management

LIST OF COURSES (CORE / ELECTIVES) from MBA Curriculum

Business Process Re-engineering
Computer Aided Production Management
Computer Applications in Business
Decision Support Systems
ERP for Manager
Human Resource Management
Management Control Systems
Management Information System
Materials Management
Modeling & Simulation
Organisational Behaviour

Principles of Management
Project Management
Production and Operations Management
Project Management for Software Development
Quantitative Technologies
Relational & Object Oriented DBMS
Software Quality Management
System Analysis & Design
Value Engineering
Web Enabled Marketing Management
Special Elective (Need Based)

MBA Course Curriculum

For detailed Syllabus kindly refer www.diasindia.org

Subjects	Credits	1st Semester	2nd Semester	3rd Semester	4th Semester
Course Work	82	Eight	Eight	Eight	---
Core	64	Eight	Eight	Two	---
Electives	18	---	---	Six	---
Practical	3	---	One	---	---
Seminars	4	One	One	---	---
Industrial Visit Report	2	---	---	Yes	---
Projects	12	---	---	---	Major
Total Credits	103	29	32	28	16

		L	T	P	C
Semester 1					
Principles of Management		3	-	-	3
Organisational Behaviour		3	-	-	3
Financial Accounting		3	1	-	4
Economics Analysis for Business Decisions		3	1	-	4
Quantitative Technologies		3	1	-	4
Management Information System		3	1	-	4
Human Resource Management		3	-	-	3
Communication Skills		1	-	4	3
Seminar		-	-	4	2
Total					30
Semester 2					
Legal Systems for Business		3	-	-	3
Quantitative Methods in Business		3	1	-	4
Financial Management		3	1	-	4
Marketing Management		4	-	-	4
Management Accounting and Control		4	-	-	4
Managerial Behaviour and Effectiveness		3	-	-	3
Project Management		3	-	-	3
Computer Applications in Business		3	-	-	3
Lab - Computer Lab		-	-	6	3
Seminar		-	-	4	2
Total					33
Semester 3					
Business Policy and Strategic Management		3	1	-	4
International Business Management		3	1	-	4
Elective 1		3	-	-	3
Elective 2		3	-	-	3
Elective 3		3	-	-	3
Elective 4		3	-	-	3
Elective 5		3	-	-	3
Elective 6		3	-	-	3
Business / Industrial Project Report		-	-	4	2
Total					28
Semester 4					
Main Project - Based on the Specialisation		-	-	-	24
Total					12
Grand Total					103

Electives: (Six) - Specialisation

International Business

- International Accounting and Multinational Enterprises
- Global Marketing
- Global Trade Financing
- Brand Management
- International Economics
- Export Marketing Strategies
- Infrastructure Management
- Web Enabled Marketing Management

Tourism

- Tourism : Principles, Practices, Philosophies
- Tourism Management
- International Travel and Tourism
- Tourism Economics
- Hospitality and Marketing Management
- Eco Tourism
- Special Elective (Need Based)

Marketing

- Strategic Marketing
- Relationship Marketing
- Service Marketing
- Advertising & Sales Promotion Management
- Industrial Marketing
- Rural Marketing
- Marketing Research
- Export Marketing Strategies
- Consumer Behaviour

Finance

- Security Analysis & Portfolio Management
- Advanced Financial Management
- Industrial Finance
- Merchant Banking & Financial Services
- Investment Management
- Financing for Export & Import

Systems

- Management Control Systems
- Decision Support Systems
- Project Mgt. for Software Development
- Relational & Object Oriented DBMS
- Web Enabled Marketing Management
- ERP for Manager
- Software Quality Management
- System Analysis & Design

Human Resource Management

- Industrial Relations & Labour Welfare
- Labour Legislation
- Risk Management
- Infrastructure Management
- Technical Entrepreneurship
- Total Quality Management
- Research Methodology

Production

- Production and Operations Management
- Computer Aided Production Management
- Materials Management
- Value Engineering
- Modeling & Simulation
- Business Process Re-engineering
- Special Elective (Need Based)

Dr. M.G.R. EDUCATIONAL AND RESEARCH INSTITUTE
(Dr. M.G.R. DEEMED UNIVERSITY)

REGULATIONS - 2003-04**

1.0 INTRODUCTION

Dr. M.G.R. Educational and Research Institute (hereafter called "THE UNIVERSITY") has been established in the year 2003 for the benefit of all and offers UG/PG and Research Programs under the three Faculties, namely:

- a) Faculty of Engineering and Technology
- b) Faculty of Medicine and Dental Science
- c) Faculty of Humanities and Sciences

MISSION

Our Students are to be the Job creators and not the Job seekers.

VISION

Creation of the centre of Excellence for Quality Education and Research in the fields of Science, Engineering, Technology, Medicine & Humanities to inculcate Technological and Competence of the students with Humane Dignity and Discipline.

MANAGEMENT POLICY

We constantly strive to provide environment with academic excellence to our students through knowledge Inputs, practice and Industrial Interaction to face Future Technology. The faculty by virtue of research and industrial interaction will enlighten our students to serve better to the society at large.

1.1 STRUCTURING OF THE REGULATIONS

The regulations are divided into five parts as follows:

Part I - Common Regulations applicable to all Faculties are covered. For minor deviation from the common regulation, asterisk mark is given and separate clauses are added under the respective programs

Part II - This part deals with the specific regulations for the following:

- Section-A Engineering & Technology Program
- Section-B B.Arch. Program
- Section-C M.B.A. Program
- Section-D M.C.A. Program

Part III - This covers the Faculty of Medicine & Dental Sciences and includes BDS programmes, which follow specific guidelines of Dental Council of India. The paramedical course and Physiotherapy is also covered.

Part IV - This covers the programs offered by the Faculty of Humanities & sciences.

Part V - This deals with Ph.D. and M.S.(Research) programs.

PART I

COMMON REGULATIONS APPLICABLE TO ALL COURSES OFFERED BY THE UNIVERSITY

(Wherever changes are applicable, the same is indicated by asterisk mark (*))

2.0 ADMISSION CRITERIA*

- 2.1 Admission to all the courses in Faculty of Engineering & Technology and Medicine and Dental Sciences will be done from candidates on All India Basis by conducting Admission Test by the University. However the candidates who have appeared for other entrance test conducted by recognized agencies would also be considered.
- 2.2 For courses offered under Humanities & Sciences the admission will be done on All India Basis based on the marks obtained in their qualifying examinations.

***Excerpts from the Regulations. Regulations are subject to change in full or any part thereof at anytime. Dr. MGR Educational and Research Institute (Deemed University) reserves the right to amend without any notice, any provisions of the regulations stated in this brochure.*

3.0 STRUCTURE & DURATION OF THE PROGRAM *

- 3.1 All courses offered by the University (except BDS course under Faculty of Medicine & Dental Science) will follow semester pattern.
- 3.2 Every program will have a curriculum with syllabi consisting of Core/ Departmental and Elective courses for broadening utility-based knowledge in and related areas.
- i) General Core Courses comprising Basic Sciences/ Language Skills and Humanities.
 - ii) Departmental courses to develop proficiency.
 - iii) Elective courses for specialisation in related fields.
 - iv) Courses include lectures/ tutorials/ laboratory/ seminar/ project work/ practical training/ report writing/ tests/ examinations/ viva-voce/ etc. to meet effective teaching/learning needs.
- 3.3 Except for Medical courses where Credit System is not followed now, each course is normally assigned certain number of credits on the basis of 01 Credit per lecture period per week/ 01 Credit per tutorial period per week/ 01 Credit for 2 periods of laboratories/ practical or seminar or project work per week, 01 Credit for 4 weeks of industrial training during semester vacations.
- 3.4 The University allows external registration by qualified candidates for specific courses which they can earn credits. These courses can be clubbed together for issue of a certificate for credits earned to enable the candidate to transfer the credits to other Universities. The candidate can also utilize the credits so earned for appearing in the examinations of Specified U.G and P.G courses of the university provided he/she fulfills all other requirements including the total credits to be earned for the approved branch of study.
- 3.5 Each semester curriculum shall normally have certain number of prescribed courses and not exceeding seven.
- 3.6 For the award of the degree, following credit pattern, a student has to earn certain minimum total number of credits specified in curriculum of the relevant branch of study.
- 3.7 The medium of instruction, tests, examination and project report will be in English except for courses on languages other than English.
- 3.8 Duration of the program* (Refer respective Programme details.)

4.0 REQUIREMENTS FOR COMPLETION OF A SEMESTER

- 4.1 A candidate who has fulfilled the following conditions shall be deemed to have satisfied the requirements for completion of a semester.
- He/She secures not less than 75% attendance in that semester taking into account the total number of periods in all courses put together attended by the candidate, as against the total number of periods in all course offered during that semester.
- He/She earns a progress certificate from the respective Dean for having satisfactorily completed all the courses in that semester, as prescribed from time to time.
- His/Her conduct is found to be satisfactory as certified by the respective Dean.
- 4.2 Candidates who do not complete the semester (as per clause 4.1), will not be permitted to write the end semester examination and are not allowed to go to the next semester. They are required to repeat the incomplete semester in the next academic year.

5.0 FACULTY ADVISER

To help the students in planning their courses of study and for general advice on the academic program, the Head of the Department will attach a certain number of students to a teacher of the Department who shall function as Faculty Adviser for those students throughout their period of study. Such Faculty Adviser shall advise the students and monitor the courses taken by the students, check the attendance and progresses of the students attached to him/her and counsel them periodically. If necessary, the faculty adviser may also discuss with or inform the parents about the progress of the students.

6.0 CLASS COMMITTEE

- 6.1 A class committee consists of teachers of the concerned class, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goals of improving the teaching-learning process. The functions of the class committee include:
- Solving problems experienced by students in the classroom and in the laboratories.
 - Clarifying the regulations of the degree program and the details of rules therein.
 - Informing the student representatives the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
 - Informing the student representatives the details of Regulations regarding weightage used for each assessment. In the case of practical courses (laboratory / drawing / project work / seminar / etc.) the breakup of marks for each experiment / exercise / module of work, should be clearly discussed in the class committee meeting and Informed to the students.

- Analysing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
 - Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.
- 6.2 The class committee for a class under a particular branch is normally constituted by the Head of the department. However, if the students of different branches are mixed in each class of the first semester, the class committee is to be constituted by the respective Dean.
- 6.3 The class committee shall be constituted on the first working day of any semester or earlier.
- 6.4 At least 2 top students representatives shall be included in the class committee.
- 6.5 The chairperson of the class committee may invite the Faculty Adviser(s) and the Head of the department to the meeting of the class committee.
- 6.6 The Dean may participate in any class committee of the institution.
- 6.7 The chairperson is required to prepare the minutes of every meeting, submit the same to the Dean within two days of the meeting and arrange to circulate among the concerned students and teachers. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the management by the Dean (CPD).
- 6.8 The first meeting of the class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held at suitable intervals. During these meeting the student member representing the entire class, shall meaningfully interact and express the opinions and suggestions of the class students to improve the effectiveness of the teaching learning process.

7.0 COURSE COMMITTEE FOR COMMON COURSES

Each common theory course offered to more than one discipline or group shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the course coordinator shall be made by the Head of the Department / Dean depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course Committee' shall meet often as possible and ensure uniform evaluation of the tests and arrive at a common scheme of evaluation for the tests. Where it is feasible, the course committee may also prepare a common question paper for the tests).

8.0 ATTENDANCE AND ASSESSMENT

- 8.1 Every teacher is required to maintain a 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topic covered), separately for each course. This should be submitted to the Head of the department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the department will put his signature and date after due verification. At the end of the semester, the record should be verified by the Dean who will keep this document in safe custody (for five years). The University or any inspection team appointed by the University may inspect the records of attendance and assessment of both current and previous semesters.
- 8.2 Three tests each carrying 100 marks shall be conducted by the department. The total marks obtained in best two tests put together out of 100 shall be reduced to 50 marks (vide clause 9) and rounded to nearest integer. The sessional marks of courses with theory and practice, the same procedure are followed for theory and practice separately and the internal mark shall be for a maximum of 50, both theory and practice put together. The weightages in grading for theory and practice portions of the subject of study shall be in ratio of credit distribution for these in the subject credit rating.

9.0 END SEMESTER*

The End Semester examinations shall ordinarily be conducted between November and December during the odd semesters and between April and May in even semesters. The maximum marks for each course (including the Project work and Viva Voce Examination in Eighth Semester) shall be 100 comprising of 50 marks for tests and 50 marks for the examinations conducted by the University. The end semester examination for all courses of study shall be for theory as well as practical.

- 9.1 For all Part Time courses offered by the University the students will be evaluated in the end examination based on the same question paper being set for the Full Time courses. However if any course is offered to the Part Time students and not offered to the Full Time courses (for e.g. Electives) the same norms for the full time courses for setting up the question paper and evaluation will be followed.

10.0 PROJECT WORK*

There shall be three assessments (each 100 marks) during the semester by a review committee constituted by the respective Dean. The student shall make presentation on the progress made before the committee. The total marks obtained in the three assessments shall

be reduced to 50 marks and rounded to the nearest integer. The end viva voce examinations shall carry a maximum mark of 50. The student should secure a minimum of 50 marks in the overall computation/ both internal assessment and the viva voce exams / declared to have passed the projects task. (Appropriate modification to this clause regarding the marks allocated for internal and external valuation can be done depending on the branch of study).

11.0 REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION*

11.1 A candidate shall normally be permitted to appear for the semester examination of the current semester if he/she has satisfied the semester completion requirements (vide Clause 4) and has registered for examination in all courses of that semester.

12.0 PASSING REQUIREMENTS*

(See Regulations of respective Faculties & Courses).

13.0 AWARD OF LETTER GRADES* (Not applicable to BDS Course)

All assessments of a course will be done on relative grading basis and letter grades/ each carrying certain points/ will be awarded as per the range of total marks (out of 100) obtained by the candidates, as detailed below:

Range of total marks	Letter Grade	Grade Points
90 - 100	H	10
80 - 89	S	09
70 - 79	A	08
60 - 69	B	07
50 - 59	C	06
<50	F	00
Incomplete	I	00
Withdrawal	W	00

"F" denotes failure due to poor performance

"I" denotes incomplete as per clause 4.1

"W" denotes withdrawal as per clause, 16

After results are declared, Grade Sheets will be issued to each student, which will contain the following details:

The Faculty in which the candidate has studied

The list of courses enrolled during the semester and the grade scored.

The Grade Point Average (GPA) for the semester and

The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA is the ratio of the sum of the products of the number of credits of the courses registered and the points corresponding to the grades scored in those courses, taken for all the courses, to the sum of credits of all the courses in the semester.

$$CGPA = \frac{\text{Sum of } [C \times GP]}{\text{Sum of } C}$$

CGPA will be calculated in similar manner considering all the courses enrolled from first semester. "F", "I" and "W" grades will be excluded for calculating GPA and CGPA.

14.0 ELIGIBILITY FOR THE AWARD OF DEGREE*

Refer respective programmes.

15.0 CLASSIFICATION OF THE DEGREE AWARDED*

15.1 A candidate who qualifies for the award of degree having passed the examination in all the subjects of all semesters in his / her **first appearance** within all consecutive semesters securing not less than **9 CGPA** shall be declared to have passed in **first class with honors**.

15.2 A candidate who qualifies for the award of degree having passed the examination in all the subjects of all semesters in his / her **first appearance** within all consecutive semesters securing not less than **8 CGPA** shall be declared to have passed in **first class with distinction**.

- 15.3 A candidate who qualifies for the award of degree having passed the examination in all the subjects of all semesters within the maximum period of all consecutive semesters reckoned from the commencement of study in the first semester securing a CGPA of **not less than 6.5** shall be declared to have passed in **first class**.
- 15.4 All other candidates not covered in 15.1, 15.2, 15.3 who qualify for the award of the degree shall be declared to have passed the examination in **second class**.

16.0 PROVISION FOR WITHDRAWAL FROM EXAMINATION

- 16.1 A candidate may, for valid reasons, be granted permission to withdraw from appearing for the examination in any two course of study of only two semester examinations during the entire duration of the degree programme. Also only one application for withdrawal is permitted for that semester examination in which withdrawal is sought.
- 16.2 Withdrawal of application shall be valid only if the candidate is otherwise eligible to write the examination and if it is made within the prescribed number of days prior to the commencement of the examination in that course of study and also recommended by the Head of the Department and the Head of the Institution.
- 16.3 Withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction.

17.0 TEMPORARY BREAK OF STUDY FROM A PROGRAM*

- 17.1 A candidate is not normally permitted to temporarily break the study. However if a candidate intends to temporarily discontinue the programme in the middle, for valid reasons (such as accident or hospitalisation due to prolonged ill health) and to rejoin the programme in a later semester he/she shall apply to the Head of the Institution in advance, in any case, not later than the last date for registering for the semester examinations of the semester in question, through the Head of the Department and Head of the Institution stating the reasons therefore.
- 17.2 The candidate permitted to rejoin the programme after the break shall be governed by the rules and regulations in force at the time of rejoining.
- 17.3 The duration specified for passing all the courses for the purpose of classification vide clause 15 shall be increased by the period of such break of study permitted.
- 17.4 The total period for completion of the programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period stipulated for the respective program irrespective of the period of break of study in order that he/she may be eligible for the award of the degree (vide clause 14).
- 17.5 If any student is detained for want of requisite attendance, progress and conduct, the period spent in that semester shall not be considered as permitted 'Break of Study' and Clause 17.3 is not applicable for this case.

18. PERSONALITY AND CHARACTER DEVELOPMENT*

All students shall enroll, on admission, in any one of the personalities and character development programmes (the NSS/NSO) and undergoes training for about 40 hours and attends a camp of about five days. The training shall include classes on hygiene and health awareness and also training in first-aid.

National Service Scheme (NSS) will have social service activities in and around the College/Institution.

National Sports Organization (NSO) will have sports, games, drills and physical exercises.

While the training activities will normally be during weekends, the camp will normally be during vacation period.

Every student shall put in a minimum of 75% attendance in the training and attend the camp compulsorily. The training and camp shall be completed during the first year of the programme. However, for valid reasons, the Head of the Institution may permit a student to complete this requirement in the second year.

19.0 DISCIPLINE

Every student is required to observe discipline, decent and decorous behaviour both inside and outside the University and not to indulge in any activity which will tend to bring down the prestige of the University.

20.0 REVISION OF REGULATION AND CURRICULUM

The University may from time to time revise, amend or change the Regulations, scheme of examinations and syllabi, as may become necessary.

- 21.2 The Course Subjects of Study are coded using alpha numerals comprising five digits in which first two digits indicate departmental alphabets, third digit, a numeral for the year of Study in a program and last two digits the Serial numbers of Courses offered in odd semesters with odd numbers and even semester courses with even numbers.

<u>X</u>		<u>XX</u>		<u>X</u>		<u>XX</u>
Bachelor		Department		Year, 1,2,3,etc.		Course Serial Numbers
Master				Elective – E		
(e.g.: M CS 1 03)	M	-	Master Programme			
	CS	-	Computer Science Department			
	1	-	First Year			
	03	-	Course Code in Serial Numbers			

21.3 The students registering for different educational programs are provided with ten digit alphanumeric code as follows:

<u>X</u>	<u>XX</u>	<u>X</u>	<u>XX</u>	<u>X</u>	<u>XXX</u>
Faculty	Year of Admission	Degree	Department	Course Code	Student Number
E-Engg/Tech	eg. 03	B-Bachelors	AR-Arch	1,2,3,4,5	Serialized
M-Medicine	04	M-Masters	CS-Computer	including FT/	(alphabetical order)
S-Science & Humanities		R-MS by Research	EE-Electrical	PT/Evening/	
		D-Ph. D	EC-Elec.Com	Off-Campus, etc.	
(Eg. E 03 B ME 1 001)					
E	-	Engineering/Technology			
03	-	Year of Admission			
B	-	Bachelors Programme			

PART II

(REGULATIONS SPECIFICALLY APPLICABLE FOR FACULTY OF ENGINEERING & TECHNOLOGY)

SECTION – A

(FOR COURSES OTHER THAN B.ARCH.)

22.0 FACULTY OF ENGINEERING AND TECHNOLOGY

The Faculty of Engineering and Technology currently comprise of departments functioning under the guidance of a Dean and respective Heads of Departments. The School of Architecture has a separate Director and an Advisor in addition to the Head of Department. All these departments listed below have well qualified and experienced professors and other faculty members, advanced laboratories, sophisticated equipment, adequate computer systems and internet connectivity.

23.0 PROGRAMMES & ELIGIBILITY

23.1 Refer first inner cover of the Brochure.

23.2 Refer first inner cover of the Brochure.

23.2.4 PG Programmes (Off-Campus) : Regulations are same as that for other Full-Time courses.

24.0 PROFESSIONAL DEVELOPMENT AND INDUSTRIAL TRAINING

24.1 All students shall enroll, on admission, in anyone of the professional society relevant to their branch of study and participate in the activities of the society for their professional development.

24.2 All students shall undergo, compulsorily at least one-month industrial training during the vacation any time prior to seventh semester examination and identify the problems for their project work later.

25.0 CHANGE OF BRANCH FOR B.E / B.TECH. COURSES

Normally change of branch will be considered only at the end of the second semester based on the successful completion and performance of the first two semesters and no change of branch will be entertained in any other semester.

26.0 STUDENT ASSESSMENT

26.1 OBJECTIVES

The primary objective of student assessment is to motivate them for learning. The secondary objective is to grade students according to their academic performance.

26.2 SUBJECTS OF STUDY

Sl. No.	TYPES	INTERNAL ASSESSMENT TESTS	WEIGHTAGE	EXAM	WEIGHTAGE
1.	Theory	T1 T2 T3	50	ET	50
2.	Theory & Practical	T1 T2 T3 PI P2	30 20	ET EP	30 20
3.	Practical	PI P2	50	EP	50

* Best two considered for grading.

26.3 INTERNAL ASSESSMENT TESTS

The teacher (concerned faculty) sets the test question papers, conducts tests, corrects the answer papers and distributes the corrected answer papers within a week after conducting the test, and puts the test keys with answers in the notice board. The test is of one-hour duration covering two units. Any discrepancies / grievances on evaluation may be brought to the notice of the teacher. The teachers attend to the requests and take suitable remedial action. The finalized test marks (average of best two out of three) copies are given to the Controller of Exam for office record through the Dean before one week of closing the semester.

Practical tests are conducted and evaluated as per the schedule drawn and average of the two tests is taken for the weightage. These test marks are made available to the students within a week after the test. The mark lists are sent to the Controller of Examinations through the Dean before one week of closing the semester.

26.3.1 Weightage for Internal Assessment

For evaluating the student 50% weightage will be given for the Internal Assessment. The internal assessment will be done by way of conducting tests, seminars, assignments and group discussions. For theory papers normally three tests will be conducted. However depending on the subjects HOD in consultation with Dean take the evaluation of assignment / seminar / group discussion as one of the tests out of three stipulated.

If a student is not able to write any of the tests due to genuine reasons HOD may arrange to conduct a special test and it may be considered for internal evaluation. However not more than one such test can be conducted for a student in a subject for the semester.

27.0 ATTENDANCE REQUIREMENT FOR ATTENDING THE SEMESTER END EXAMINATION.

The teacher handling a subject of study must finalize the attendance percentage and performance report three days prior to the last instruction day of the subject of study in the semester and send it to HOD and DEAN. The students falling short of 75% attendance are normally not allowed to write the end semester exam. However those students who have less than 75% attendance for the period other than their medical leave can be considered for condonation of attendance by the Vice Chancellor provided that their overall attendance in a subject of study including the period of illness does not fall below 50%. If the attendance falls short due to medical ground backed by medical certificate up to 5% shortfall can be condoned by Dean and if it is more than 5% Vice Chancellor will have the discretionary power for condonation on a case to case basis.

27.1 CREDIT REQUIREMENTS

A student will have to earn minimum credits as given below for award of degrees.

01. M.E. / M.Tech. Courses (FT & Off-Campus)	-	75
02. M.S. (By Research)	-	75 (20 + 20 + 35)
03 M.B.A. - Full Time / Off-Campus	-	102

28.0 END SEMESTER EXAMINATION

For P.G. course the question papers can be set by internal examiners and if the required experience and qualified persons are not readily available then question papers can be set by external examiners.

A Question Paper Passing Board will be set up by Vice Chancellor for reviewing the model question papers for internal assessment test and end semester examination.

28.1 VALUATION OF END SEMESTER EXAMINATION

For all P.G. courses double valuation will be done first by the internal faculty and second by the external faculty. Any discrepancy of more than 10 marks may lead to revaluation at the discretion of Dean.

For all practical examinations an external faculty will be present for conducting the end examination and evaluating the student based on his/her practical skill as well as knowledge to be ascertained by viva voce.

28.2 REVALUATION OF END SEMESTER EXAMINATION

For P.G. courses the students can request for revaluation and Dean can arrange for the revaluation if convinced about the reasons for such an action.

28.3 PROJECT EVALUATION

The continuous assessment carries 50% weightage and is done through two seminar presentations P1 & P2 and the End semester examination carries 50% weightage for the report submitted and viva voce. For the final assessment both internal as well as external faculty should be available for a joint assessment.

28.4 RESULT PASSING BOARD

A Result Passing Board will be constituted by Vice Chancellor for reviewing the results and for evaluating the performance of the students for any corrective action if required.

29.0 AWARD OF LETTER GRADES

Refer Clause 13 of Part I.

Section - C

SPECIFIC REGULATIONS APPLICABLE TO POST GRADUATE DEGREE OF MANAGEMENT STUDIES

44.0 ADMISSION CRITERIA

44.1 ELIGIBILITY FOR ADMISSION

A pass in any Degree given by a University approved by UGC.

44.2 An admission test can be conducted following the pattern "CAT TEST" for selection of the candidates. However the performance of candidate who has appeared for other approved entrance tests also will be considered for selection.

44.3 STRUCTURE OF PROGRAMS

Every program will have a curriculum with syllabi consisting of Basic, Functional and Elective courses.

- i) Courses include lectures, tutorials, laboratory, seminar, project work, practical training, report writing, tests, examinations, viva voce, etc., and to meet effective teaching/learning needs.
- ii) Elective Courses are offered on various specializations like International Business, Tourism, Marketing, Finance, Human Resource, Systems, Export, etc.

Each course is normally assigned certain number of credits on the basis of 01 Credit per lecture period per week, 01 Credit per tutorial period per week, 01 Credit for 2 periods of laboratories, practical or seminar or project work per week, 01 Credit for 4 weeks of industrial training during semester vacations.

Each semester curriculum shall normally have eight courses.

For the award of the degree, a student has to earn certain minimum total number of credits specified in curriculum. The minimum will be 102 Credits for full-time and 102 credits for part-time.

The medium of instruction, tests, examination and project report will be in English.

Evaluation of the theory papers and project work will be done on mark basis and converted in to credits.

44.4 DURATION OF THE PROGRAM

A student is ordinarily expected to complete the M.B.A. program in 4 Semesters (two academic years) but in any case not more than 8 semesters. Each semester shall normally consist of 15 weeks. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught. End-Semester Examination will ordinarily follow immediately after the last working day of the semester.

44.5 PRACTICAL TRAINING

At the end of the second semester all students will under go a practical training in any industry / business organization of repute for a minimum of six weeks duration. At the end of the training they will submit a report highlighting their observation and give at least identify *one* problem area where Management practices can improve the performance of the organization.

45.0 PROJECT WORK

The fourth semester is entirely devoted for taking an industry / business related project work. The project will focus on specific management problems, which can be solved by application of the concepts they studied preferably in their specialties. An internal faculty as well as an external guide will guide the project.

However the students are also encouraged to take up specific research projects which is of inter disciplinary nature and also of entrepreneurial value where they can apply their own creative ideas. In this case an internal faculty as well as external experts will guide the project.

The students are required to submit an abstract of the project within 15 days of starting up of the 4th semester. The progress of the project will be evaluated based on three seminar presentations, which will be evaluated by a group of faculty and preferably one external expert.

Out of the total 12 credits allocated for the project six credits will be given for continuous assessment as per norms given above and the remaining six will be for the final project report and a viva voce.

The final assessment of the report and viva voce will be conducted by two examiners one the internal guide and the second the external guide expert or examiner.

Project report and viva voce will be given a weightage of 60:40. The project work should be an individual one.

The project report should be submitted within 16 weeks from the starting date of the semester.

46.0 PART TIME COURSE

The part time course will have six semesters. The requirement of practical training is not compulsory for part time. However in lieu of the practical training specified for full time course, they have to submit a mini project covering a specific management problem either faced in the organization they are working or else where.

47.0 REQUIREMENTS FOR COMPLETION OF A SEMESTER AND AWARD OF DEGREE

Total credits required for the MBA Full Time - 102

Total credits required for the MBA Part Time - 102

(Remaining conditions are same as other P.G. Courses under Engineering & Technology)

PART V

SPECIFIC REGULATIONS APPLICABLE TO DEGREE OF DOCTOR OF PHILOSOPHY AND MASTER OF SCIENCE (By Research) M.S. (By Research) & Ph.D

56.0 PREAMBLE

The Degree of Doctor of Philosophy (Ph.D.) is awarded to a candidate who as per these regulations, has submitted a thesis on the basis of original and independent research in any particular discipline or involving more than one discipline (interdisciplinary), that makes a contribution to the advancement of knowledge, which is approved by suitably constituted examiners as required.

The regulations do not apply to the faculty of Medicine and Dental Science.

57.0 ELIGIBILITY

57.1 Ph. D

For purposes of admission for the Ph.D. programme, a candidate should have obtained a Master's Degree in any branch of science/ Humanities and M.Phil or Masters Degree in Engineers / Technology / Architecture with not less than Second Class or equivalent grade. In the case of examinations, where classification does not exist, a minimum of 50% marks is needed in the qualifying examination.

Admission for Ph.D. programme can be made at any time of the year. Registrations, for Ph.D., may be done two times per year (August + January) accordingly.

There shall be the following categories of candidates registered for Ph.D. Degree

[a] Full-time (with or without stipend or fellowship)

[b] Part-time (teacher or non-teacher; internal vis-a-vis external)

Both the categories may register at our University, or Research Institutions coming under these regulations.

57.2 M. S. (By Research)

A candidate who has qualified for the award of the Bachelor's Degree in Engineering / Technology / Architecture / M.Sc. in Science of any recognized (Indian and Foreign) University or any other qualification recognized as equivalent thereto in the field of study notified from time to time by this University is eligible to apply for the Master of Science by Research (M.S. by Research) Programme. In the case of examinations, where classification does not exist, a minimum of 50% marks is needed in the qualifying examination.

58.0 ADMISSION PROCEDURE

All the candidate who wish to register for Ph.D and M.S. (By Research) programmes will have to write an admission test conducted by the University followed by viva-voce. A committee consisting of experts in relevant field will be evaluating the student based on the performance of the written test as well as viva voce for deciding the suitability of the candidate for registration.

59.0 REGISTRATION FOR Ph.D. DEGREE AND DURATION OF RESEARCH

59.1 FULL-TIME

The following candidates are eligible to register for the full-time Ph.D. programme. A candidate who has qualified for the Master's Degree in the corresponding branch of study of any recognized university for which research facility is available in this university.

59.2 PART-TIME (INTERNAL)

A candidate, while working in Dr. M.G.R. Educational & Research Institute (Deemed University) with a minimum of 2 years service and possessing anyone of qualification prescribed supra is eligible to conduct research on a part-time basis (Example Teachers, research/technical/teaching assistants/administrative staff etc.)

59.3 PART-TIME (EXTERNAL)

External registration provides an opportunity for qualified persons working in outside organizations to obtain a higher research degree without necessarily spending two or three years in residence at this Institute as would be required in the case of regular full-time Institute scholars. Its main objective is to encourage industry-oriented research and to have useful interaction between this Institute and other organizations for mutual benefit.

59.3.1 Notwithstanding anything contained in these regulations, candidates possessing any one of the qualifications from the Dr. M.G.R. Educational Research Institute (Deemed University) prescribed under Regulation I supra, and employed as a teacher, scientist or in any other related capacity in National /State level Institutions, Universities and Research and Development institutions outside the territorial jurisdiction of this University, and who are sponsored by the respective organizations for pursuing research leading to the Ph.D. Degree of this University on a part-time basis, while continuing the employment, may be permitted to be registered for the Ph.D. Degree on a part-time basis as external candidates; provided there is an understanding between the Dr. M.G.R. Educational Research Institute (Deemed University) and the organization concerned to have such research scholars on reciprocal basis (i.e.) these organizations, while sponsoring University for the Ph.D. programme of such organizations as and when required). These candidates are expected to do research in their place of employment and in addition they should undergo such course and research work as may be prescribed by the supervisor/ doctoral committee for a minimum period of eight months directly under the supervisor in this University. In addition to the supervisor from this University, they shall have a joint supervisor from the Institution where they are employed, provided the University recognizes such supervisors as supervisors for Ph.D. research.

60.0 DURATION OF RESEARCH

60.1 Ph.D. - FULL-TIME

A candidate registered as full-time candidate for the Ph.D. Degree possessing anyone of the above qualifications (59.1 & 59.2) shall work continuously in the department under the supervisor concerned for a minimum period of TWO YEARS (for Engineering / Technology) and THREE YEARS (for Humanities / Sciences) after provisional registration before submission of thesis. (b) Maximum period allowed for completion is seven years. Any further extension will be only at the discretion of Vice Chancellor depending on the merits of the case.

60.2 PART-TIME

A candidate registered for Ph.D. Degree registered as a part-time candidate [Both internal and external above shall work for a minimum period of THREE YEARS (for Engineering / Technology) and FOUR YEARS (for Humanities / Sciences) after provisional registration before submission of the thesis.

60.3 M. S. PROGRAMME

Duration of the programme minimum 2 years.

60.4 CONVERSION OF FULL-TIME REGISTRATION INTO PART - TIME AND VICE VERSA

Notwithstanding anything prescribed in these regulations, the University may permit conversion from Full-Time research to Part-Time research and vice-versa in respect of candidates registered, for valid reasons and subject to satisfying the regulations, rules and conditions in force. The period put in by the candidate will be worked out in the ratio of 3:4 FT:PT for research put in before and after such conversion.

60.5 RESIDENTIAL REQUIREMENTS

- 60.5.1** A candidate registered on a Full-Time basis shall work for the minimum period of research prescribed supra after the date of provisional registration and before submission of thesis in the department or institution under continuous supervision.
- 60.5.2** A candidate registered on Part-Time [internal] basis in all subjects except those involving laboratory works shall work two semesters during the course of research at the institution where the supervisor is attached. The Supervisor has to issue the attendance certificate to be forwarded by the Head of the Department to the Controller of Examinations and Dean.
- 60.5.3** Provided that those who have been permitted to be registered on a part-time basis in subjects involving laboratory work in an institution other than where they are working, shall be required to work for a minimum total period of eight months in the institution directly under the supervisor: If required, the period of eight months of residency may be spent in four spells of not less than two months each during an academic year in the course of their research;
- 60.5.4** Provided, in all the above cases 60.5.1, 60.5.2 and 60.5.3, the research work shall be monitored by the Doctoral committee hereinafter prescribed, through periodical reports.

60.6 APPLICATION FOR PROVISIONAL REGISTRATION

A candidate applying for provisional registration shall furnish all the information needed in the form prescribed together with the fees prescribed.

Every applicant who satisfies all the conditions and procedures prescribed shall, after approval by the University, be provisionally registered for the Degree.

For inter-disciplinary research the proposal under inter-disciplinary research should be submitted in the prescribed format duly approved by the departmental committee along with the minutes and forwarded by the supervisor and Head of the Department concerned.

60.7 INSTITUTIONS WHERE RESEARCH CAN BE DONE

A candidate may be permitted to pursue research leading to Ph.D., in anyone of the following Institutions subject to satisfying conditions of eligibility (wide Supra), availability of supervisor and necessary facilities.

- [a] The departments of the University
- [b] All India Research Institutions and Regional Research Institutions duly recognized by the University or UGC for conducting research
- [c] Well equipped Research and Development departments of public and private sector undertakings recognized by this University as having necessary facilities for prosecuting research at an advanced level.

60.8 SUPERVISOR FOR RESEARCH

Every candidate for the Ph.D. degree shall work under the continuous supervision of a recognized supervisor in a given department of this university or recognized supervisor in categories (iv) (B) Provided that for inter-disciplinary research alone, a candidate may have a co-guide in yet another department of approved institution if the supervisor so desires No immediate or close relative of the candidate shall act as a supervisor.

- 60.8.1** A person may be recognized as a supervisor for Ph.D. research in any faculty including Engineering and Technology/Architecture, if he possesses a Ph.D. degree of this University or of any other University recognized by the Academic Council as equivalent thereto and not less than THREE years of Post-doctoral teaching and/or research experience with a minimum of two research publications in National/International journals or equivalent published work like books to his/her credit. The panel of supervisors will be available as follows;
- i) At our University
 - ii) From other Universities
 - iii) From Industries

60.9 NUMBER OF CANDIDATES UNDER A SUPERVISOR

The total number of candidates registered for the Ph.D. Degree, including part-time scholars, at any point of time shall not exceed six in the case of a supervisor working in one of the University Departments and six in the case of a supervisor working in the approved or recognized institutions/research institutions;

Provided further that the number of part-time (non-teacher) candidates under a supervisor at any time may not exceed three. Provided also that for assessing the number of vacancies under a supervisor the minimum period of research permissible for a candidate or the date of submission of the thesis whichever is earlier may be taken into account.

60.10 DOCTORAL COMMITTEE

For every candidate Full-Time, Part-Time (internal and external) registered for the Ph.D degree, a Doctoral Committee of not less than three members of the faculty who are recognized supervisors shall be constituted with the approval of the University as follows:

In respect of candidates registered for the degree under a supervisor, either as Full-Time or Part-Time (internal and external), the Doctoral Committee shall consist of the supervisor, Dean of the respective faculty as its convener, the Head of the Department concerned, provided he/she a recognized supervisor or his/her nominee, and one other member from institutions in the neighbourhood, who is an expert in the subject.

Provided that in respect of inter-disciplinary research, the co-guide shall also be included as a member, in addition to those mentioned above;

Doctoral Committee will have the prescribed functions. Half-yearly Progress Reports should be maintained in the prescribed form by the Supervisor and kept in the department office.

The doctoral committee shall meet at least once in the year for the first three years and once in 6 months thereafter.

60.11 FUNCTIONS OF THE DOCTORAL COMMITTEE

- a. To discuss, advise and recommend on all matters connected with the candidate's research from provisional registration till the submission of thesis;
- b. To suggest courses to be undertaken by the candidate during the first year of his/her provisional registration, in the light of his/her attainment and with a view to fulfilling the requirements of the research;

Such courses of instruction may be given, as short term courses lasting from three to four months in such subjects as may be chosen by the Doctoral Committee and through seminars, discussions, occasional lectures, laboratory techniques, field work, etc;

- c. To examine the candidate by written and oral examinations, on the completion of such courses, at the end of the first year of provisional registration and to report to the University on the fitness or otherwise of the candidate to proceed with his/her research work for the Ph.D. Degree and recommending the confirmation of the provisional registration;

In case where a candidate is not approved at the end of the first year by the Doctoral Committee, it may recommend that the candidate should undergo additional course for a further period of not exceeding 6 months, at the end of which he/she shall be examined again; and if found fit, his/her provisional registration will be confirmed and he/she will be permitted to proceed with his/her research work.

A candidate who is not found fit even after the additional course and re-examination shall not be permitted to continue research and his/her provisional registration shall be cancelled.

- d. To monitor the candidate's work periodically by directing him/her [a] to give periodical seminars on his/her work; [b] to submit six monthly reports to the University on the candidate's progress in research work in the prescribed format; [c] to conduct and supervise a presentation by the candidate of the final draft of his/her proposed thesis for approval; before the submission of synopsis of the thesis to the University and to give a certificate to this effect to be submitted along with the synopsis;
- e. To suggest a panel of names for appointment as examiners by the University, for evaluating the thesis and for the public viva-voce examination, consisting of three names from outside India, and three names from within India with a broad geographical identification (excluding Dr. M.G.R. Educational and Research Institute), taking special care to see that none of the names so suggested is an immediate relative of the candidate;

Provided that persons suggested for appointment as examiners should have doctorate themselves with teaching and/or research experience for at least 10 years at the post graduate level with research publications in standard referred research journals, national and international to their credit;

For institutions, where infrastructure is available, the Syndicate can delegate the monitoring of the progress of the candidate till the submission of synopsis to the institution.

61.0 EXAMINATION EVALUATION AND EXAMINATION

61.1 COURSE WORK AND EVALUATION

Every candidate provisionally registered for the Ph.D. Degree, shall, after undergoing the course prescribed by the Doctoral Committee, submit himself/herself to written and oral examination at the end of the first year after provisional registration. A candidate who is approved by the Doctoral Committee, on the basis of these examinations will be registered as a candidate for the Ph.D. degree thereafter confirming his/her provisional registration. He/She shall be permitted to proceed with his/her research work and submit the thesis, at the expiry of the minimum total period of research prescribed after provisional registration. The candidate should give one seminar after registration in a general field connected with his/her research, and a second seminar on the results data of his/her research work.

Provided that where a candidate is not approved by the Doctoral Committee, as per provisions supra, it may recommend that the candidate should undergo additional course for a further period not exceeding six months, at the end of which he/she shall be examined again, and if found fit, his/her provisional registration will be confirmed and he/she will be permitted to proceed with his/her research work and submit his/her thesis.

A candidate who is not found fit even after the additional course and re-examination at the end of six months shall not be permitted to continue research and his/her provisional registration shall be cancelled.

61.2 SYNOPSIS AND THESIS SUBMISSION

61.2.1 SUBMISSION OF SYNOPSIS

Not less than three months before the submission of the thesis, every candidate shall submit to the University, through the Supervisor or the Convener of the Doctoral Committee wherever pertinent, a Synopsis (6 copies) of the proposed thesis together with certificate of the doctoral committee and state the title of the thesis, to be presented in the prescribed application form and fee. The candidate shall inform the probable date of submission of his/her thesis in the application. The synopsis shall not exceed 20 typewritten or printed pages (one side only of A4 size).

Not later than six months after the submission of the Synopsis and after the expiry of the minimum period of research prescribed, every candidate shall submit five copies of the thesis embodying the results of the research carried out by him/her, along with the prescribed application form and fee.

Before the submission of the synopsis, the candidate should present a seminar on his or her data for the Ph.D. thesis and the Doctoral Committee should send a report of the same while forwarding the synopsis.

The title page of thesis, cover, format, etc., should strictly conform in presentation as prescribed and the thesis (all Copies) should carry a declaration by the candidate and a certificate duly signed and issued by the Supervisor.

No candidate shall ordinarily be permitted to submit his thesis after a period of five year in the case of full-time research scholars and seven years in the case of part-time research scholars; Provided that the University may for valid reasons and on the recommendations of his/her supervisor, grant extension of time for not more than two years in all, to the candidate. A candidate, who is not able to submit his/her thesis even after the grant of extension of two years, shall have his/her registration cancelled.

The Ph.D thesis/Synopsis may generally be written in English [for subjects other than languages]

For re-registration candidates with change of supervisor and/or topic of thesis, the required period would be similar to the freshly registered candidates. After the expiry of the one year period of time the Ph.D. registration stands cancelled.

61.3 SUBMISSION OF THESIS BEFORE THE MINIMUM PERIOD PRESCRIBED

Notwithstanding anything contained in these regulations regarding the minimum period of research to be put in by candidates before becoming eligible to submit their thesis for the degree, it shall be competent for the Academic Council, to permit candidates to submit their thesis earlier by a period of not exceeding six months provided such request for earlier submission from candidates is accompanied by

- [a] the recommendation of the supervisor for relaxation based on the satisfactory completion of research work for the thesis topic with evidence that the candidate has been working consistently even prior to his/her provisional registration for the Ph.D. degree, on the topic of his/her research;
- [b] evidence of having completed the required work for the thesis by way of at least two publications in the topic of Ph.D. research in recognized journals and/or evidence of having three papers from out of the Ph.D. thesis work in national conferences.

62.0 ADJUDICATION OF Ph.D. THESIS

62.1 EXAMINERS

The vice-chancellor with the help of the Dean of the concerned faculty may appoint a Board of Examiners for valuation of thesis consisting of two external examiners, one from within India and the other from outside India, from the panel suggested by the Doctoral Committee and submitted by the supervisor in addition to research supervisor.

Provided further that no close or immediate relative of the candidate be appointed to act as examiner.

The Board of Examiners so appointed shall value the thesis and report on the merit of the candidate for the award of the Ph.D. Degree. Each examiner is expected to give a detailed report on the thesis apart from a Proforma for adjudication in the format prescribed.

The Board of Examiners shall report on the merit of the candidate as "Highly commended", "Commended" or "Not commended".

The two external examiners shall send the individual report together with the Proforma to the University. The supervisor will submit his/her individual report also to the university in the Proforma.

If all the three examiners unanimously recommend the award of the degree, the candidate will be asked to appear for a public viva-voce examination.

In addition, the candidate should carry out the corrections etc., if any, suggested by the other examiners, before the public viva-voce examination. The supervisor shall furnish a certificate to this effect, together with the list of corrections, to the University before the said examination.

If one of the external examiners recommends the award and the other does not recommend the award, the vice-chancellor may refer the thesis to a third examiner from the same category (Indian / Foreign) for valuation.

The third examiner will not be provided with the report of the other examiners. If the third examiner recommends the award, the candidates will be asked to appear for a public viva-voce examination prescribed earlier.

If the third examiner also does not recommend the award, the degree will not be awarded to the candidate.

62.2 PUBLIC VIVA-VOCE

A candidate whose thesis has been recommended for the award of the degree by the Board of Examiners who valued the thesis shall submit himself/herself to a public viva-voce examination by the supervisor and one external examiner appointed by the vice-chancellor. The Indian examiner, who valued the thesis, shall, as far as possible, be appointed as external examiner to conduct the public viva-voce examination for the candidate. Members of the department in the subject concerned where the candidate conducted research and outside specialist, if any, may participate in the public viva-voce examination. The supervisor shall convey to the University, the result of such public viva-voce examination duly endorsed by the external examiner, together with a list of participants in the examination with their signature, designation and address. A candidate who is also successful at the public viva-voce examination shall be declared to have qualified for the Ph.D. degree by the vice-chancellor and the ratification of the Board of Management be obtained for the same in due course.

A copy of the thesis of the candidate appearing for the public viva-voce examination shall be deposited in the departmental library for perusal of those interested in the thesis before the conduct of the public viva-voce examination, together with appropriate public notice issued by the supervisor for the purpose.

If for any reason, the supervisor is unable to conduct the public viva-voce examination, or where the candidate has been permitted to conduct research on an independent basis, the vice-chancellor may appoint a suitable examiner, in his/her place.

If for any reason the supervisor is unable to conduct the Public Viva-Voce examination even two months after the approval of the consolidated report on the Ph.D. thesis by the University and after appointment of the viva-voce examiner, the vice-chancellor may make alternate arrangements for the conduct of the viva-voce examination in time.

A candidate, who is not successful at the public viva-voce examination, may be permitted to take the same on a second occasion, after the expiry of three months. If he/she is not successful even on the second occasion at the public viva-voce examination, the degree will not be awarded to him/her.

No candidate shall be permitted to submit a thesis or to appear for the public viva-voce examination on more than two occasions.

63.0 FORMAT OF DEGREE

The Ph.D degree certificate shall incorporate the title of the thesis along with the name(s) of the faculty/faculties and discipline(s).

64.0 PUBLICATION OF THE THESIS

A thesis, whether approved or not, shall not be published without permission of the Board of Management and it may grant permission for the publication under such conditions as it may impose.

Provided that a candidate may, during the course of his research, publish papers in standard research journals, as advised by his/her supervisor, but the thesis as a whole shall not be published without obtaining permission of the Board of Management mentioned supra.

Permission for publication of the thesis should be made within five years of the award of the degree.

65.0 TRANSITORY PROVISION

These regulations will come into effect from 1st November 2003 and shall be applicable also to those candidates registered for the Ph.D. degree under the existing regulations.

EMPLOYMENT POTENTIAL

IT's Boom Time for High-Skill Back-Office Jobs :

The search for people with MBAs, insurance diplomas, and even Ph.Ds is emerging as the latest trend in the country's back-office service sector. Back-office jobs in financial services rose to an estimated 24,000 in the year to March 2003 from 15,000 a year earlier, and revenues to \$510 million from \$300 million, according to the National Association of Software and Service Companies. India has cornered 60% of the \$16 billion offshore IT services market and the country is now set to dominate the next big sector outsourcing of financial services.

India Operations To Expand, Motorola May Add Manpower :

Sighting a major business opportunity in India in telecom infrastructure, handsets and R & D, Motorola has decided to increase its manpower in the country. It also plans to make India the R&D and engineering base for its global operations and will increase the number of employees here from the existing 1,500. Motorola will focus largely on managing infrastructure for service providers.

\$15 Million Investment for Flextronics' Indian Facilities

Planned investments of around \$15 million over the next 4-5 years and hiring over a 1,000 more employees forms part of the expansion plans for the \$13.4 billion electronics manufacturing services giant Flextronics. The company presently services the telecommunication and consumer electronics industries.

ICICI Bank to invest \$100 million in international plans

Marking a beginning of its international operations with the opening of an offshore banking unit (OBU), ICICI Bank Ltd has earmarked an investment of \$100 million for its global strategy, including setting up subsidiaries in the UK and Canada this year.

Indian operations of Corio to expand

Corio Incorporated uses advanced engineering skills and, automation software to offer technology and consulting services over high-speed telecom and computer networks. The US-based Corio Inc, which provides technology services for business software customers, aims to quadruple staff in India by the end of the year from the current 25, a senior company official said. The company is looking at 1000 employees by the end of the year.

Bill Gates: Outsourcing not reducing jobs in US

The Microsoft(MS) Chairman Mr. Bill Gates says that MS and other US firms may be sending work overseas to cut costs, but the market for software developer jobs in the US remains strong and needs more qualified candidates. US firms may be outsourcing some jobs, such as customer services, call centre, he said, but pointed out that it was not the driving force turning away prospective computer science engineers. He noted there had been widespread pessimism about technological advances ever since the Internet* boom* of the late 1990s and 2000 fizzled out.

Ness headcount to touch 5000

Mr. Kushal Desai, Director, Ness Technologies, an IT, service provider, has said it is planning an initial public offering (IPO) in the next 18 to 24 months. The company also announced the completion of its \$78million buyout of US-based Apar Infotech. Ness Global Services, the Indian arm of the company, said the headcount is expected to grow to around 5,000 in India in the next two years.

Reliance Info raises call centre strength to 6,500

Reliance Infocom, the new economy company of the Reliance Group, plans to reach 6,500 people on the rolls of its IT enabled services (ITes) business in the next one year. Though low profile compared to other captive call centres, Reliance's call centre, with a current strength of 2,500 people, offers customer care services to its existing CDMA subscribers and has been used only for internal purposes so far.

Hyundai to recruit 1,000 more

Hyundai Motor India (HML) Managing Director Mr. J.I. Kim said Hyundai Motor India; the country's second biggest carmaker will recruit 1,000 workers to meet a planned increase in its production capacity by one-lakh units to 2.5 lakh cars by the end of next year.

Big time IT recruitment in the offing in Kolkata

Here's good news for IT students and professionals in Kolkata. The City of Joy is high in the list of IT and ITes companies that are planning to either start, operations or ramp up their presence in the country. The city is emerging as the next stop for outsourcing of Time and Material contracts by the global Tier-1 information and technology companies. If the trend continues the city could even take over from metros like Bangalore and Hyderabad.

A million jobs a year? Sure, if you spend big

The household consumption spending in India is expected to double to \$510 billion by 2008, says a DSP-Merrill Lynch report. And this jump in spending would boost the services sector, generate up to one million jobs every year and also double the country's GDP to \$1 trillion by 2010, says the report titled "India Economics".

TTML plans to invest about Rs 1,000 crore over the coming years for upgrading infrastructure and limited mobility services. So far, the company has invested up to Rs. 350 crore for roll-out of its limited mobility services in Maharashtra.

Courtesy : HRD News Letter

In India

Biotech Products consumption in the year 2007, it will grow 10 times ie. 1.5 billion dollars and in 2010 it share will reach to 4.5 billion dollars.

Mumbai

Mr. P.K. Mukherji, Director, Small Services Institute told, share of India in Biotechnology is now 1% in the world market. Within 5 years India will have 10% in the world market.

Courtesy : Vaartha

Hyderabad

Biological E Ltd is starting a Biotechnology unit worth of Rs. 100 crore at Shopurji Palouji Biotech Park in 50 acres land.

Courtesy : Eenadu