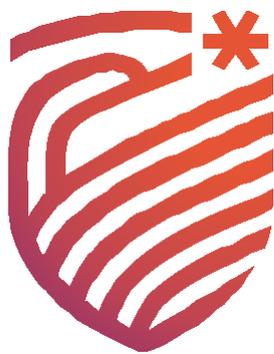


# PROSPECTUS



**RAMAIAH  
UNIVERSITY**  
OF APPLIED SCIENCES

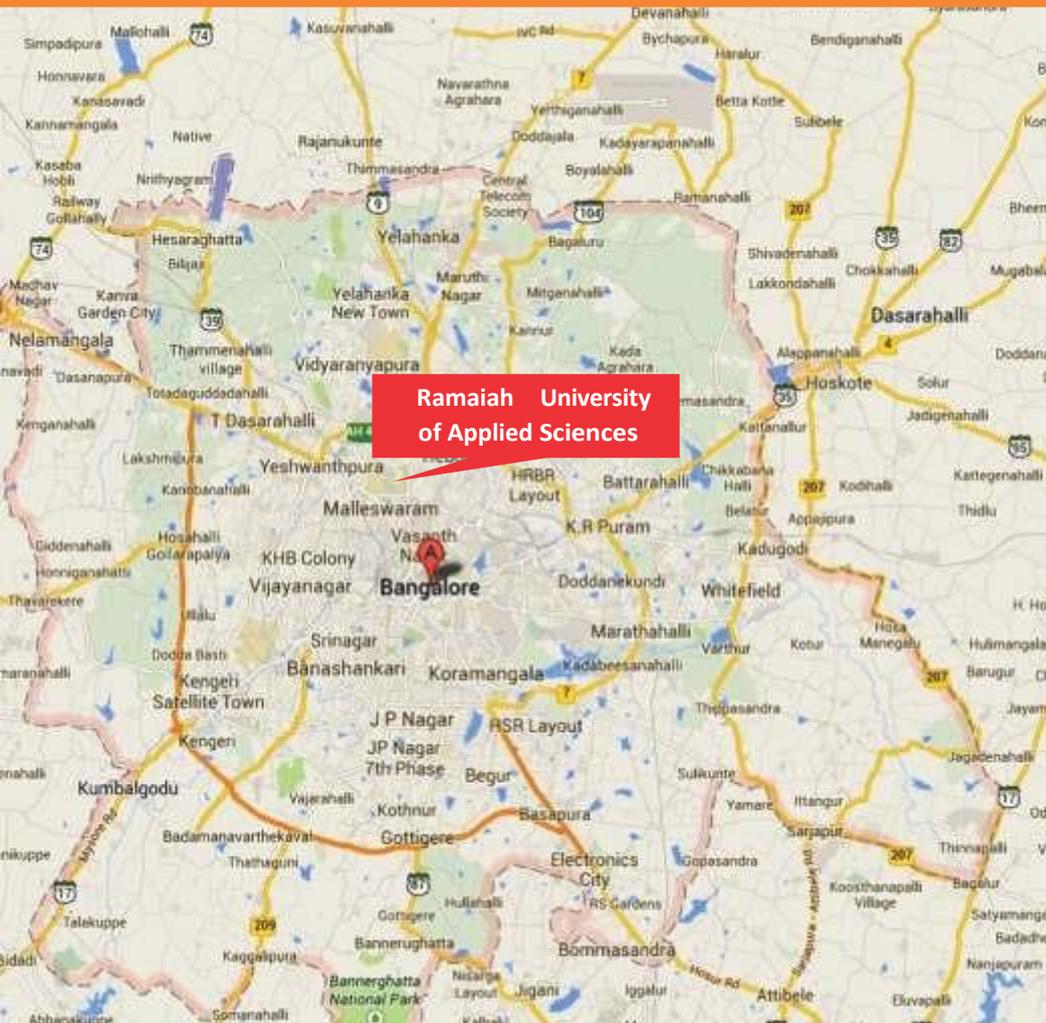




# Welcome to Bengaluru

Bengaluru is the capital city of the Indian state of Karnataka, located on the Deccan Plateau in the south-eastern part of Karnataka. Bengaluru is India's third most populous city with a population of almost 8 million and is known as garden city and it is well known for its weather. Bengaluru is the India's biggest IT- Hub and is known as Silicon Valley of India and it is the house for many advanced technology research establishments including aerospace and defense. There are more than 15 public, deemed and private universities in the city with more than 60 engineering colleges and 8 medical colleges with a total student population in higher education exceeding 2,50,000.







Established Gokula Education Foundation - A Public Charitable Trust in 1962 with a mission  
"To Deliver Education and Health Care for the Betterment of Mankind".  
The trust established M. S. Ramaiah Institute of Technology in the year 1962.

**The following institutions were established over the years:**

- |   |   |
|---|---|
| M. S. Ramaiah Medical College                       | M. S. Ramaiah School of Advanced Studies                    |
| M. S. Ramaiah Medical Teaching Hospital             | M. S. Ramaiah Memorial Hospital                             |
| M. S. Ramaiah Dental College                        | International Medical School                                |
| M. S. Ramaiah College of Pharmacy                   | M. S. Ramaiah Gokula Ayush Arogyadhama                      |
| M. S. Ramaiah College of Hotel Management           | M. S. Ramaiah College of Education                          |
| M. S. Ramaiah Composite Junior College              | M. S. Ramaiah Advanced Learning Centre                      |
| M.S. Ramaiah Vidyanikethan                          | M. S. Ramaiah Rehabilitation Centre                         |
| M. S. Ramaiah College of Arts, Science and Commerce | M. S. Ramaiah Institute of Neurosciences                    |
| M. S. Ramaiah College of Law                        | M. S. Ramaiah Narayana Hrudayalaya Heart Centre             |
| M. S. Ramaiah Institute of Management Studies       | M. S. Ramaiah Indic Specialty Ayurveda Restoration Hospital |
| M. S. Ramaiah Polytechnic                           | M. S. Ramaiah Public Policy Center                          |







## Chancellor's Message

It gives me great pleasure to note that the University has entered its sixth academic year after successfully completing the first five years. The University was launched with the intention of embracing global educational practices into our existing higher education system to bring it on par with the higher education system that is in vogue in developed countries. Initially, I was rather skeptical about the acceptance of the system of education that had been designed by our faculty members who had gained several years of experience in imparting education using the practices adopted in developed countries, particularly in Europe.

I would like to convey my thanks to our students and their parents for wholeheartedly embracing the new system. At the end of the each academic year I have witnessed the positive energy amongst the students, parents and staff and, on enquiry, students have expressed their opinion that although the system demands enormous efforts the learning experience made it worthwhile.

In India, IITs are known for engineering and technology education, IIMs are known for management education, NIPER is known for pharmacy education, AIIMS is known for medical education and NID is known for design education. It is my dream that we at Ramaiah University of Applied Sciences should replicate the combined characteristics of all these institutes and achieve this status of excellence in due course. I am confident that this challenge will be accepted and fulfilled by the members of faculty at the University and its administrators. Collectively, we are aiming to develop a great institution that our nation can feel proud of while serving the generations of the future and focusing on developing global citizens.

I wish great success to all the members of the University in their endeavor to achieve excellence in higher education.

Dr. M. R. Jayaram



## Philosophy

Education with Devotion (Bhakti) is a process of Perfection for larger good

## Vision

“RUAS aspires to be the premier university of choice in Asia for student centric professional education and services with a strong focus on applied research whilst maintaining the highest academic and ethical standards in a creative and innovative environment”

## Mission

Our purpose is the creation and dissemination of knowledge. We are committed to creativity, innovation and excellence in our teaching and research. We value integrity, quality and teamwork in all our endeavors. We inspire critical thinking, personal development and a passion for lifelong learning. We serve the technical, scientific and economic needs of our society

## Objectives

1. To disseminate knowledge and skills through instructions, teaching, training, seminars, workshops and symposia in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to equip students and scholars to meet the needs of industries, business and society
2. To generate knowledge through research in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences to meet the challenges that arise in industry, business and society
3. To promote health, human well-being and provide holistic healthcare
4. To provide technical and scientific solutions to real life problems posed by industry, business and society in Engineering and Technology, Art and Design, Management and Commerce, Health and Allied Sciences, Physical and Life Sciences, Arts, Humanities and Social Sciences
5. To instill the spirit of entrepreneurship in our youth to help create more career opportunities in the society by incubating and nurturing technology product ideas and supporting technology backed business
6. To identify and nurture leadership skills in students and help in the development of our future leaders to enrich the society we live in
7. To develop partnership with universities, industries, businesses, research establishments, NGOs, international organizations, governmental organizations in India and abroad to enrich the experiences of faculties and students through research and developmental programmes

## Welcome from the Vice Chancellor

We have just completed six academic years; the fourth batch of postgraduates have left the portals of the University. It is nothing wrong to say that **Ramaiah University has pioneered Student Centric Outcome Based Education in India**. It was indeed a challenging task to familiarize the members of faculty, staff and students and to gain acceptance for **Student-Centric Outcome Based Education** - a revolutionary, teaching and learning system. Initially, it was a daunting task to make faculty members unlearn older concepts and learn new concepts of teaching and assessing. Students, for a long time, kept comparing their efforts with their counterparts in other universities and often expressed difficulty in coping with the new system. However, without getting disheartened, we at the University persuaded the faculty members and students on the benefits of the new system often inspiring them with many motivational talks and helping them through training. All these efforts seem to have paid off when we saw a large number of blogs appearing in the digital media, written by our own students, analyzing the visible benefits they were deriving from this new method of teaching and learning with frequent comparisons to the learning experience of their peers studying in the best universities abroad.

With a sense of great satisfaction, I am pleased to report that the University has obtained 2(f) status from UGC and has been ranked, by NIRF-MHRD, as the 90th best University in the Country. Recently, K-SURF (Karnataka State University Rating Framework) rated the University as a Four-Star University and the best Innovation University in the State of Karnataka. In addition, leading educational and news magazines have ranked the University as the best emerging Research and Innovation University. There are more than 350 faculty members of which more than 100 members are Ph.D. degree holders. We have a further 300 Technical and Administrative staff supporting the University's operations.

University Faculty members have, during the last academic year, published more than 325 research articles in Scopus indexed journals; organized more than 12 seminars and workshops; and filed for more than 25 patents. The Techno Centre has completed more than 50 consultancy projects for industry and businesses while the Research division has attracted reasonable amount of research funds. Our Directorate of Training and Lifelong Learning has trained more than 2000 delegates in various technology areas and in higher education practices. Faculty members and students have provided various community services like patient care and participated in our "Service to Society" programme completing a number of activities for the benefit of the communities spread across the state. Our Technology Incubation and Entrepreneurship Cell is incubating more than 15 start-ups with fund support from MSME. The University will be hosting "Karnataka Aerospace Technology Centre" on its Campus in Peenya. It has setup Garment Design Centre with the funding from Karnataka Government and it has a functional Technology Business Incubation Centers funded by Gol and GoK.

The University has entered into collaborative relationships with a number of universities from USA, UK, Russia and other European countries and a number of students and staff exchange programmes have been completed with at least 25 students and staff members visiting an overseas University. More than 15 student Dream Teams have been promoted by the University for Students to take part in international competitions. One team is working on a Micro Satellite while another team is working on Electric Propulsion. Our students have won many national level competitions and hackathons. This year more than 350 students have completed M. Tech., M. Des., MBA, MHA, M. Com., M.Sc., M. Pharm., Degrees. At least five M.Tech. Projects have achieved the potential for being commercialized having worked in collaboration with industry and funds from TIFAC. A considerable number of these graduates have been placed in reputed organizations. The University has created two Centers of Excellence and 21 specialist Research Centers to emphasize on research in contemporary areas of knowledge. More than 185 scholars are pursuing their PhD. The first convocation for PG students was held during the month of November 2016.

Equipped with state-of-the-art facilities in the laboratories, libraries and other resource centers the University has created the right environment to provide rich teaching, learning, research and real-life, problem-solving experience to its students as well as its faculty members. Many of the facilities created can be compared to what is available at some of the best universities across the globe.

I believe in the statement "***The mind is not a vessel to be filled, but a fire to be kindled.***" and we strive to "***Ignite the Minds***" for improving the life of the people of the World and India in particular by developing Global Citizens through our education system.

**Ramaiah University of Applied Sciences "Inspiring Applied Thinking"**

# Ramaiah University of Applied Sciences

Ramaiah University of Applied Sciences (registered as M. S. Ramaiah University of Applied Sciences) is a Private University established by an Act of the State of Karnataka, India. The University is sponsored by Gokula Education Foundation – a public charitable trust owned by Ramaiah family. The Gokula Education Foundation has promoted more than 29 institutions in the last 55 years offering higher education and quality healthcare.



Ramaiah University of Applied Sciences (RUAS) has been established with a vision to be known as a modern, innovation-intensive university, where the university continuously interacts with the industry, business, communities, and government organizations. The University aims to produce graduates who are confident, can think creatively and apply their academic learning and practical skills to find innovative solutions to problems faced by the Society.

The University has Faculties of Engineering and Technology, Art and Design, Management and Commerce, Mathematical and Physical Sciences, Life and Allied Health Sciences, Pharmacy, Dental Sciences and Hospitality Management. All the faculties offer undergraduate, postgraduate and PhD programmes. The University infrastructure supports 10,000 students. There are separate Directorates like Quality, Educational

Processes and Educational Technologies; Student Affairs; Sponsored Research; Training and Lifelong Learning; Techno Centre; Transferable Skills and Leadership Development and International Collaborations and Partnership Management to support the academic activities and interaction with Industry, Business, Communities, Government and other Universities in India and abroad.



The University has invested in advanced design, simulation, manufacturing and testing facilities, all housed in modern buildings. RUAS has implemented outcome based curriculum which focuses on equipping our youth with knowledge & understanding, cognitive abilities, practical skills relevant to industrial and societal needs.

The University has adopted global best practices in teaching, learning and assessment to ensure all-round development of students for a happy and successful career. Being a comprehensive university, the courses are inter and multidisciplinary in nature which is an essential characteristic of present day education. All courses are designed to train students to be creative, innovative and imaginative which are the fundamental requirements of the graduates of 21st Century.



In India, the IITs, IIMs, AIIMS, NIPER and NID are well known for technology, management, medical, pharmacy and design education respectively. It is envisioned that RUAS will evolve into a University that combines the successful features of all these institutions and become the Premier Innovation University in Asia

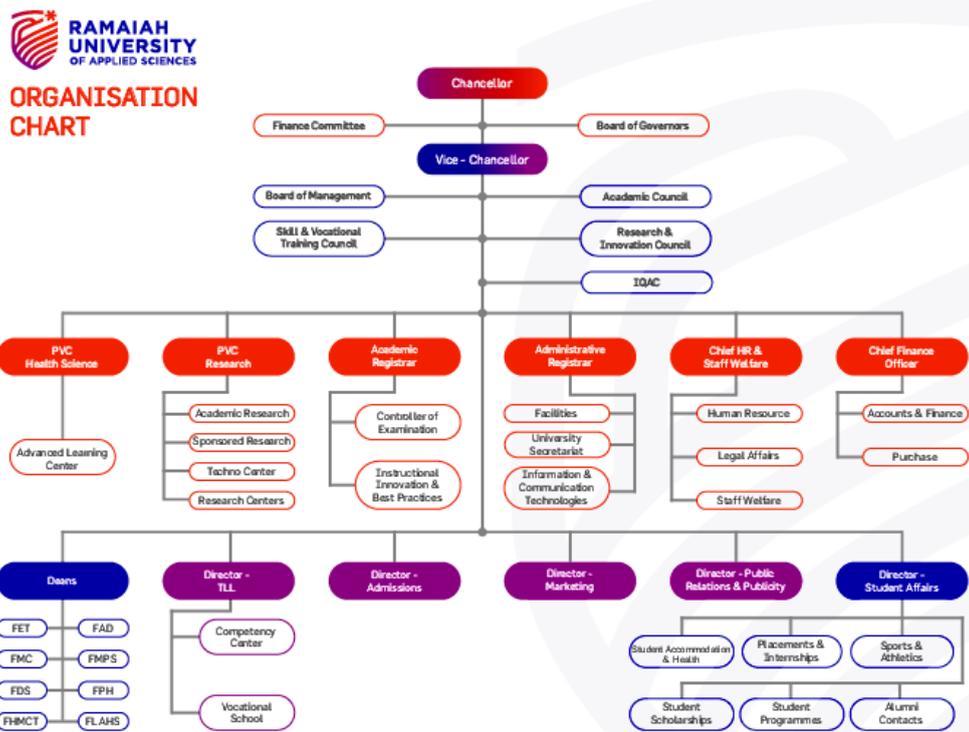
## Faculties, Directorates and Organization

The University aims to focus its programmes on student centric higher education so that the graduates are equipped with the theoretical knowledge and skills expected by industry and business. The university has five verticals – Academic Studies; Academic Research; Sponsored Research; Training, Skill Development and Lifelong Learning; and Techno Centre – a Consultancy, Product Design and Development and Entrepreneurship Development unit. Students of the University are expected to experience an integrated approach to academics, research, training, real life problem solving and entrepreneurship.

The University, at present has established faculties in Engineering and Technology, Art and Design, Management and Commerce, Hospitality Management and Catering Technology, Pharmacy, Dental Sciences, Mathematical and Allied Health Sciences and Life and Allied Health Sciences. Through these faculties, the University offers undergraduate, postgraduate and doctoral programmes. The faculties offer an enriched curriculum drawn from the strong relations the faculties have had with the industry and business.

The University has created Directorates of: Student Affairs; Quality, Educational Processes and Educational Technologies (QEPET); Sponsored Research; Training and Lifelong Learning (TLLL); Transferable Skills and Leadership Development (TSLD); International Collaborations & Partnership Management (ICPM) and Techno Centre to provide rich all-round experience to the students.

The University head office is located at the Gnanagangothri Campus, MSR Nagar, New BEL Road, Bangalore. The University has invested in modern infrastructural facilities like Class Rooms, Seminar Halls, Laboratories, Work Shops, Clinics, Libraries, Skills Lab, Simulation Lab, Student Amenities including Sports Centers, Hostels, Cafeteria, Recreation Centres, Literary and Cultural activity centers, Wi-Fi and other support facilities to make the students' experience enjoyable and memorable. The strength of the faculties lies within its well qualified, experienced and student friendly Faculty Members. The M. S. Ramaiah University of Applied Sciences is committed to work on the philosophy of inclusiveness and service to society; train its faculty members and students to contribute significantly to the growth of science, technology and society through their imaginative, creative and innovative pursuits. The University is expected to have more than 500 members of faculty and 8000 students on its campuses spread over more than 100 acres of land in the near future.



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## **FACULTY OF ENGINEERING AND TECHNOLOGY**

The Faculty of Engineering and Technology (FET) offers a total of 11 Undergraduate and 13 Postgraduate Programmes. The Undergraduate Programmes are of 4 years duration and lead to a B. Tech. Degree while the postgraduate Programmes are of 2 years duration and lead to an M. Tech. Degree. FET comprises of six Departments:

### **Department of Aerospace Engineering**

The Department offers the following Programmes.

#### **1. Undergraduate Programmes**

- a. **B. Tech. in Aerospace Engineering:** The Aerospace Engineering degree programme will impart knowledge of various aerospace systems and their sub systems; enhance the understanding of underlying engineering principles that govern the behavior of aerospace systems; teach analytical modeling, simulation and analysis to study the behavior of different aerospace systems; provide the skills to design, build and test sub-systems. It also trains students on personal development and interactive skills with a feel for society.

The highlights of the programme are:

- Learner centric and outcome-based education
- World class learning facilities including industry-based simulation tools and financial aid to setup a start-up company
- Gateway to global learning experience with more focus on innovation
- Emphasis on applied learning including numerical and experimental investigation on aerodynamics
- Internship, training and placement support
- Option to do additional certificate courses in Machine Learning and Artificial Intelligence
- Option to complete the final year in foreign universities like University of Illinois at Chicago and Michigan Technological University

- b. **B. Tech. in Automotive Engineering:** The Automotive Engineering degree programme will impart knowledge of automotive systems and their subsystems; enhances the understanding of underlying engineering principles that govern the behavior of automotive systems; teach analytical modeling, simulation and analysis to study the behavior of automotive systems; provide the skills to design, build and test automotive systems. It also trains students on personal development and interactive skills with a feel for society.

The highlights of the programme are:

- Learner centric and outcome-based education
- World class learning facilities including industry-based simulation tools and financial aid to setup a start-up company

- Gateway to global learning experience with more focus on innovation
- Emphasis on Applied Learning including application of Machine Learning and Artificial Intelligence
- Internship, training and placement support
- Option to do additional certificate courses such as electric vehicles and autonomous vehicles
- Option to complete the final year in foreign universities like University of Illinois at Chicago and Michigan Technological University

## 2. Postgraduate Programmes

- a. **M. Tech. in Aerospace Engineering:** The aim of the **M. Tech. in Aerospace Engineering** programme is to produce postgraduates with advanced knowledge and understanding of aerospace system design; higher order critical, analytical, problem solving and transferable skills; ability to think rigorously and independently to meet higher level expectations of aerospace industry, academics, research or take up entrepreneurial route.

The highlights of the programme are:

- Learner centric and outcome-based education
- World class learning facilities including industry-based simulation tools
- Emphasis on applied learning including numerical and experimental investigation on hypersonic flow
- Gateway to global learning experience with more focus on innovation
- Emphasis on group project, internship and research-oriented dissertation work
- Opportunity to do industry sponsored research project and financial aid to setup a start-up company

- b. **M. Tech. in Automotive Engineering:** Students will be able to apply the knowledge, understanding and skills acquired to carry out automotive engineering design, simulation, analysis, synthesis and evaluation of components/systems. Emphasis will be placed on imaginative and creative approach to automotive engineering design and development.

The highlights of the programme are:

- Learner centric and outcome-based education
- World class learning facilities including industry-based simulation tools
- Emphasis on applied learning including numerical and experimental investigation on vehicle dynamics
- Gateway to global learning experience with more focus on innovation

- Emphasis on group project, internship and research oriented dissertation work
- Opportunity to do industry sponsored research project and financial aid to setup a start-up company

## **Department of Civil Engineering**

The Department offers the following Programmes.

### **1. Undergraduate Programmes**

- B. Tech. in Civil Engineering:** The programme will impart knowledge of civil structures, geotechnical interactions, construction engineering and technology, environmental engineering, hydrology, irrigation and water management. It enhances the understanding of underlying engineering principles that govern the behavior of civil engineering systems. It teaches analytical modeling, simulation and analysis to study the behavior of civil engineering systems. It provides the skills to design, build and test civil engineering systems. It also trains students on personality development and interactive skills with professionals and feel for the society.

The highlights of the programme are:

- Outcome based education with learner centric delivery and applied learning
- Flexible and dynamic curriculum implementing requirement of industry
- Mini projects and one major project covering all important areas of Civil Engineering
- Excellent Institute - Industry interaction resulting in guest lecture, Internships, site visits and placements
- Students can do project at St. Petersburg University of Architecture and Civil Engineering, Moscow State University of Civil Engineering.
- Can pursue B. Tech. integrated with M.S. in association with reputed American and European Universities.
- Certificate Programs along with regular curriculum

### **2. Postgraduate Programmes**

- M. Tech. in Structural Engineering:** Students will be able to apply the knowledge, understanding and skills acquired to carry out engineering design, simulation, analysis, synthesis and evaluation of structural components/systems. Emphasis will be placed on imaginative and creative approach to structural engineering design and development.

The highlights of the Programmes are:

- Learner centric outcome-based education
- Industry-focused and hands-on curriculum and a Project Based Learning (PBL) environment
- Exposure to cutting-edge software for industry-specific expertise & State of art laboratories for research and teaching aid at global standards
- Flexible curriculum design with electives leading to specialization
- Dissertation works in the domain of earthquake engineering, steel construction, retrofitting of structures and advanced construction materials

b. **M. Tech. in Construction Engineering and Management:** Students will be able to apply the knowledge, understanding and skills acquired to carry out engineering design, simulation, analysis, synthesis and evaluation of construction projects. Emphasis will be placed on imaginative and creative approach to Construction Engineering and Management.

The highlights of the programme are:

- Learner centric outcome-based education
- Industry-focused and hands-on curriculum and a Project Based Learning (PBL) environment
- Exposure to cutting-edge software for industry-specific expertise & State of art laboratories for research and teaching aid at global standards
- Flexible curriculum design with electives leading to specialization
- Dissertation works in the domain of Green Construction / Energy management and Artificial Intelligence Association with professional bodies

c. **M. Tech. in Environmental Engineering and Management:**

The aim of the programme is to produce postgraduates with advanced knowledge and understanding of Environmental Engineering and Management; critical thinking, analytical-problem solving and transferable skills; ability to think rigorously and independently to meet higher level expectations of industry, academics, research or take up Entrepreneurial route. Students will be able to apply the knowledge, understanding and skills acquired to carry sustainable Solid Waste and Wastewater Management through Research and Technological Inputs. Students also will be capable to carry out engineering design, simulation, analysis, synthesis and evaluation of Waste treatment processes and operation. Curriculum also Emphasizes on adopting interdisciplinary and creative approach in resource conservation and resource efficiency through waste prevention and by recovering valuable material and/or energy from waste

The highlights of the programme are:

- Learner centric outcome-based education
- Industry-focused and hands-on curriculum and a Project Based Learning (PBL) environment
- The programme is designed to train young Scientist-Engineers to deal with the complex challenges of the environmental waste characterization, treatment, and safe disposal
- Comprehensive programme with exposure to all aspects of the environment — air, water, solid and hazardous waste, sustainability and more.
- Highly collaborative interdisciplinary programme that fosters teamwork
- Active Industry-academia interaction through guest lectures, Industrial training, seminars and symposia
- The programme aims to train and educate engineering graduates and mid-career engineers who want to take on more advanced roles and responsibilities

- d. **M. Tech. in Transportation Engineering:** Students will be able to apply the knowledge, understanding and skills acquired to carry out design, simulation, analysis and evaluation of transportation projects. Emphasis will be placed on technical and economical approach to address transportation problems.

The highlights of the Programmes are:

- Learner centric outcome-based education
- Industry-focused and hands-on curriculum and a Project Based Learning (PBL) environment
- Exposure to cutting-edge software for industry-specific expertise & State of art laboratories for research and teaching aid at global standards
- State of the art laboratories for post graduate studies and research in pavement and traffic engineering
- More emphasis on projects from industry to maximized employability in transportation engineering

### **Department of Computer Science and Engineering**

The Department offers the following Programmes.

#### **1. Undergraduate Programmes**

- a. **B. Tech. in Computer Science and Engineering:** The programme is designed to produce creative and knowledgeable engineers with capabilities to innovate, design and develop computing and information technology solutions for diverse requirements of society, environment and human endeavours. The programme aims to produce graduates with critical, analytical and problem

solving skills, and ability to think independently, to pursue a career in Computer Science and Engineering.

The highlights of the programme are:

- Emphasis on Programming courses: Learning programming using Python as a first programming language, programming courses in C , Java are also offered with adequate practical training
- Balanced treatment of both theory and practice of computer science concepts by offering appropriate courses such as Operating Systems and Compiler Construction; practical training on Linux OS, tools such as LEX and YACC
- Detailed and gradual coverage of design of data structures, algorithms, analysis, and correctness of programs; along with effective process models in software development.
- Ample opportunity through laboratory sessions, assignments and projects to gain expertise in various tools and libraries, for numerical and computing applications as well as AI and Machine Learning
- Foundation in courses such as Artificial Intelligence and Data Mining with opportunities to apply in practice
- Internship, training and placement support

b. **B. Tech. in Artificial Intelligence and Machine Learning:** The programme aims to lay the foundational background in computer science to start with, to be inter-disciplinary and to seamlessly integrate courses in Artificial Intelligence, Machine learning and Data Sciences to enable a student to effectively apply these aspects in industry and R&D establishments. The programme goal is to produce graduates with critical, analytical and problem-solving skills, and ability to think independently, to pursue a career in Artificial Intelligence and Machine Learning.

The highlights of the programme are:

- Focus on core pre-requisites for courses on Artificial Intelligence, Machine Learning, Neural Networks and Deep learning to lay a strong foundation
- Attention to inter-disciplinary trends and developments
- Best practices in software development for AI solutions with rich training in modern tools, libraries, and AI programming environments
- Theory and Application of Artificial Intelligence and Machine Learning in Scientific and Engineering domains with an emphasis on Healthcare and Smart cities
- Proficiency in popular programming languages: Python and R, with regular practice and application development for AI solutions
- Internship, training and placement support

- c. **B. Tech. in Information Science Engineering:** The programme aims to train students to build effective information systems in any required domain with the latest database and Web technologies and construct and deploy large scale Information Systems that are AI and Big Data enabled. The programme goal is to produce graduates with critical, analytical and problem-solving skills, and ability to think independently, to pursue a career in Information Science and Engineering.

The highlights of the programme are:

- Focus on foundational courses such as Programming, Data Structures and Algorithms, Discrete Mathematics and Software Development Process Models.
- Best practices in effective software architectures, design, coding and validation of software for solutions to build reliable large-scale information systems
- Information Science and Engineering courses with pre-requisites drawn from an appropriate blend of Computer Science and Machine Learning courses.
- Proficiency in popular programming languages: Python, C, Java and Database Systems with regular practices and focus on information systems
- Internship, training and placement support

- d. **B. Tech. in Mathematics and Computing:** The programme offers a balanced set of courses in theoretical computer science, models of computation, applied mathematics, machine learning, programming languages, parallel computing and computer architecture. The students are trained to apply appropriate mathematical tools to design innovative algorithms for various problems, to solve scientific, financial and management problems using appropriate mathematical models as the basis for computer algorithms and also in driving innovations in computational models and computer architecture based on practical experience in solving complex problems.

The highlights of the programme are:

- Focus on current trends: Security, Cryptography, Machine learning and Quantum Computing
- Proficiency in popular programming languages: Python, C, Java with regular practice and applications based on appropriate mathematical models
- Attention to inter-disciplinary trends and developments

- Best practices in software development with rich training in tools, libraries, and parallel programming environments
- Theory and Application of Mathematics and Computing in Scientific, Engineering and Financial domains
- Internship, training and placement support

## 2. Postgraduate Programmes

- M. Tech. in Data Science and Engineering:** The programme lays an adequate foundation in data science, mathematics and programming. The programme also lets the student acquire specialized knowledge and insights with a balance in coverage of theory and practice to be able to build effective big data applications.

The highlights of the programme are:

- Focus on core pre-requisites for courses on Big Data Life Cycle, Data Mining Algorithms and Map Reduce Paradigm to lay a strong foundation
- Proficiency in popular programming languages: Python and R, with regular practice and application development for Big Data solutions
- Best practices in software development for Big Data solutions with rich training in modern tools such as Hadoop, libraries and programming environments including Cloud computing
- Development and nurturing of the innate innovation potential in students by fostering a creative environment in group project and thesis work dedicated to themes of innovation
- Theory and Application of Big Data processing and mining in Scientific and Engineering domains with an emphasis on Healthcare and Smart Cities
- Development of presentation and communication skills of students so that they transition to professionals smoothly
- Attention to inter-disciplinary trends and developments
- Internship, training and placement support

- M. Tech. in Artificial Intelligence and Machine Learning:** The programme introduces the principles and working of machine learning and intelligent systems. It enhances the students' knowledge on design, development and testing of various machine learning algorithms and systems using industry standard tools. It is structured in such a way that the students will be able to build intelligent systems and evaluate machine learning algorithms for domain specific applications.

The highlights of the programme are:

- Focus on core pre-requisites for courses on Artificial Intelligence, Machine Learning, Neural Networks and Deep learning to lay a strong foundation
- Best practices in software development for AI solutions with rich training in modern tools, libraries and AI programming environments
- Theory and Application of Artificial Intelligence and Machine Learning in Scientific and Engineering domains with an emphasis on Healthcare and Smart Cities
- Internship, Training and Placement support
- Proficiency in popular programming languages: Python and R, with regular practice and application development for AI solutions
- Development and nurturing of the innate innovation potential in students by fostering a creative environment in group project and thesis work dedicated to themes of innovation
- Development of presentation and communication skills of students so that they transition to professionals smoothly
- Attention to inter-disciplinary trends and developments
- Internship, training and placement support

### **Department of Electrical Engineering**

The Department offers the following Programmes.

#### **1. Undergraduate Programmes**

- a. **B. Tech. in Electrical and Electronic Engineering:** The programme will impart knowledge of electrical and electronic systems and their sub systems, enhances the understanding of underlying engineering principles that govern the behavior of electrical and electronic systems, teach analytical modeling, simulation and analysis to study the behavior of electrical and electronic systems, provide the skills to design, build and test electrical and electronic systems.

The highlights of the programme are:

- Learner centric education
- Courses are designed to imbibe core competencies
- Gateway to global learning experience
- Emphasis on applied learning
- State of art facilities for interdisciplinary research
- Wide spectrum of industry relevant elective courses
- Platform to participate in innovative competitions/projects
- Training on computational tools for design and analysis of systems
- Regular industrial visits
- Placement in leading companies

- MoUs signed with foreign universities for joint academic and research activities - University of Illinois, Chicago; Texas A&M; University of Southern California

## 2. Postgraduate Programmes

- M. Tech. in Power Electronics and Drives:** The programme introduces the concepts of power electronic converters and electric drives. Students will be able to apply the knowledge, understanding and skills acquired to design, simulate, analyze, synthesize and evaluate various topologies for a given application. It is structured to enable the students to build power electronic controllers for specific applications, analyze power quality issues, electromagnetic interference and compatibility using standard tools. Emphasis will be placed on critical thinking and innovative problem solving approaches in the domain of power electronics and drives.

The highlights of the programme are:

- Learner centric and outcome-based education
- Courses are designed to imbibe core competencies
- Internship, Training, Placement Support and financial aid to start-up companies
- World Class Learning Facilities including Industry specific Simulation Tools
- Gateway to Global Learning Experience and more focus on Innovation and Attention to inter-disciplinary trends and developments
- Gateway to global learning experience, Placement in leading companies

## Department of Electronics and Communication Engineering

The Department offers the following Programmes.

### 1. Undergraduate Programmes

- B. Tech. in Electronics and Communication Engineering:** The programme imparts knowledge in signal processing, network analysis, control systems, electromagnetic fields, communication systems and electronic devices. Students are taught theoretical aspects, problem-solving, analytical modeling, simulation and analysis to study the behavior of electronic circuits and communication systems. Students are trained in practical aspects of analog/digital circuits, instrumentation, electronic devices and programming. In addition, students are trained on personal development and interactive skills with professionals and feel for society.

The highlights of the programme are:

- Learner centric and outcome-based education
- World class learning facilities with advanced simulation software
- Emphasis on applied learning
- Internship, training and placement support
- Opportunity for earning minor degree
- Academic collaboration with top foreign universities that lead to opportunity for learning abroad
- Opportunity to specialize in subfields such as VLSI & Embedded system, Signal and Image processing, Biomedical signal & image processing, and Communication theory
- Motivated to choose cutting edge online courses as open elective in final year
- Distinguished guest lectures from globally renowned Institutions and Industries

## 2. Postgraduate Programmes

- M. Tech. in VLSI and Nanotechnology:** The programme imparts knowledge in signal processing, network analysis, control systems, electromagnetic fields, communication systems and electronic devices. Students are taught theoretical aspects, problem-solving, analytical modeling, simulation and analysis to study the behavior of electronic circuits and communication systems. Students are trained in practical aspects of analog/digital circuits, instrumentation, electronic devices and programming. In addition, students are trained on personal development and interactive skills with professionals and feel for society.

The highlights of the programme are:

- Learner centric and outcome-based education
- World class learning facilities
- Emphasis on applied learning
- Internship, training, and placement support
- Academic Collaboration with top foreign universities that lead to opportunity for learning abroad
- State of the art laboratory in Full Custom Design, ASIC, FPGA and Embedded programming, Quantum Mechanics, Nano Electronics, Device modelling and PCB Design
- Distinguished guest lectures from globally renowned Institutions and Industries

### **Department of Mechanical and Manufacturing Engineering**

The Department offers the following Programmes.

## 1. Undergraduate Programmes

- a. **B. Tech. in Mechanical Engineering:** The Mechanical Engineering degree programme will impart knowledge of mechanical systems and their sub systems; enhances the understanding of underlying engineering principles that govern the behavior of mechanical systems; teach analytical modeling, simulation and analysis to study the behavior of mechanical systems; provide the skills to design, build and test mechanical systems. It also trains students on personal development and interactive skills with a feel for society.

The highlights of the programme are:

- Progressive curriculum with hands on experience in most courses and a wide stream of electives to choose from
- Enhanced learning experience through exposure to real time industrial & societal problems and opportunities for self-learning
- Experienced and Qualified faculty with exposure to research and industry
- Facilities supporting curriculum to enhance learning experience and for interdisciplinary research
- Placement opportunities in core and allied companies
- Mentorship for student development and participation in competitions
- Student driven dream teams in Formula cars, Robotics, etc.

b. **B. Tech. in Robotics:**

B.Tech. programme on Robotics is designed to cater to the needs of industrial sectors like aerospace, automotive, manufacturing, communications, defense, electronics and healthcare. Robotics are the prime movers towards human independent systems and processes promoting national interests. This happens through synergistic integration of various streams, namely, Mechanics and Mechanical Engineering, Electrical, Electronics, Computer Science and Artificial Intelligence.

The highlights of the programme are:

- AI-driven interdisciplinary programme
- Experienced and Qualified faculty with exposure to research and industry
- Hands on experience in most courses and wide spectrum of high impact elective courses to choose from
- Enhanced learning experience through exposure to real time industrial problems and opportunities for self-learning
- Mentorship for student development and participation in competitions
- Facilities supporting curriculum to enhance learning experience and for interdisciplinary research
- Internships, Projects, and Innovation Courses embedded in the curriculum

## 2. Postgraduate Programmes

- a. **M. Tech. in Advanced Machinery Design:** The aim of the programme is to produce postgraduates with advanced knowledge and understanding of contemporary machinery design; higher order critical, analytical, problem solving and transferable skills; ability to think rigorously and independently to meet higher level expectations of industry, academics, research or take up entrepreneurship.

The highlights of the programme are:

- Programme curriculum intended to produce postgraduates with advanced knowledge and understanding of contemporary machinery design concepts and principles
- Progressive curriculum with stream-wise electives to choose from Comprehensive coverage of complementary areas like mechanisms, kinematics and dynamics of machines, materials, manufacturing processes, tribology, control systems and optimization techniques
- Exposure to detailed design procedure through various courses and usage of modern design tools to design machineries for specific applications
- Exposure to real time industrial & societal problems, internships, group project and dissertation, as part of curriculum, stimulates self-learning

- b. **M. Tech. in Manufacturing Technologies and Engineering Management:** The programme integrates the salient features of two disciplines namely, manufacturing technologies and engineering management. The programme aims to prepare the students to solve operational problems in manufacturing and service industries. The students are exposed to various simulation tools to further strengthen their knowledge and skills in the respective domains of chosen specialization.

The highlights of the programme are:

- Industry relevant programme with a unique blend of Manufacturing Technologies and Engineering Management designed for providing advanced knowledge in various Manufacturing Processes, Experimental Designs, Management of different functions and their integration
- Progressive curriculum with a stream-wise elective to choose from
- Exposure to real time industrial & societal problems, internships, group project and dissertation as part of curriculum stimulates self-learning
- Courses embedded with case studies, laboratories, and industry specific software tools to consolidate learning
- Student projects lead to patent applications, Publications, startups, and jobs

- c. **M. Tech. in Robotics Engineering:** The aim of the programme is to produce postgraduates with advanced knowledge and understanding of contemporary Robotics systems development; higher order critical, analytical, problem solving and transferable skills; ability to think rigorously and independently to meet higher level expectations of industry, academics, research or take up entrepreneurial route.

The highlights of the programme are:

- Programme curriculum designed to produce postgraduates with advanced knowledge and understanding of contemporary Robotics systems development
- Inter-disciplinary programme covering various areas like Kinematics and Dynamics, Mechatronics, Sensors, Image and Signal processing, Control systems and Programming
- Progressive curriculum with stream-wise electives to choose from
- Exposure to real time industrial & societal problems, internships, group project and dissertation, as part of curriculum, stimulates self-learning
- Facilities supporting curriculum to enhance learning experience and for interdisciplinary research

## **FACULTY OF ART & DESIGN**

Faculty of Art and Design offers Undergraduate and Postgraduate Programmes in Design. The design courses and the curriculum at RUAS have been evolved, over the years, by the members of faculty based on their teaching experience and long standing interaction with various foreign universities particularly Coventry University of UK and industry and will nurture the creative capabilities of students. The curriculum offered is outcome based and helps students to develop critical thinking, creative and innovative abilities and imbibe relevant practical skills for a smooth transition from academics to the actual work environment. Internship opportunities are provided for students to do their project in India or abroad depending on their preference.

### **The Faculty offers Undergraduate and Postgraduate Programmes in**

1. Product Design
2. Fashion Design

The undergraduate Programmes are of 4 years duration and lead to the Bachelor of Design (B. Des.) Degree while the postgraduate courses lead to the Master of Design (M. Des.) Degree. The postgraduate courses in the Faculty of Art & Design are offered in the full-time and part time route with a duration of two and three years, respectively.

The courses in Art and Design challenge the creative pursuit of students. Though the courses are highly popular in the western world, they are slowly catching up in India. The National Institute of Design pioneered Design courses in India, now many of the IITs offer design courses.

The Faculty conducts research and undertakes sponsored research for Lifestyle products, automotive, industrial design, and agricultural product companies. The Faculty is recognized as a PACE (Partner for the Advancement of Collaborative Engineering Education) Institute and under this partnership programme the Faculty interacts actively with designers of General Motors and Students take part in international student competitions conducted among more than 70 PACE institutes world over. Over the years our students have won many design competitions nationally and internationally.

The Faculty works very closely with MSMEs, Agriculture Universities and NGOs. Annually, the students participate in national level design competitions conducted by Automotive and Product Design and Development Companies and they have won several awards including i3 awards twice. Many designs created by the students have appeared in national TV channels. The Faculty publishes more than 25 papers annually and contributes to the University publications- Book of Students Projects Abstracts, a student feedback magazine called Reflections and a biannual technical journal-SAS Tech.

Many alumni of the Faculty have been working as designers for reputed car companies across the world.

## **2. UNDERGRADUATE PROGRAMMES**

### **a. B. Des. in Product Design:**

This programme aims to create innovative problem solvers in multi-disciplinary settings, entrepreneurs and leaders applying the knowledge, understanding, cognitive abilities, practical skills and transferable skills gained through systematic, flexible, and rigorous learning in the chosen academic domain. The graduates thus produced will be able to meet the human resources requirement of product development industry, business, and commerce. Also, the graduates will be able to take entrepreneurial route for their career advancement. Moreover, this acts as a first course to develop further expertise in a chosen domain.

#### **Opportunities:**

The graduates of this course will have an opportunity to:

- Apply knowledge of Art and Design fundamentals to solve complex problems in product development
- Analyze design problems, interpret data, and arrive at meaningful conclusions involving design inferences
- Design an artifact considering public health and safety, and the cultural, societal, and environmental considerations
- Apply appropriate tools and techniques and understand utilization of resources appropriately to complex design activities
- Understand the effect of design solutions on legal, cultural, social and public health and safety aspects

#### **Highlights**

- Students can select field of core interest from 6th semester
- Fourth year emphasizes on project and management using basic skills acquired in three years
- State of Art Infrastructure with dedicated labs and studios
- Internship programs abroad for giving students Global Learning Experience

### **b. B. Des. in Fashion Design:**

The Programme aims to impart knowledge and skills to design and develop fashion products including garments and accessories to pursue a career in fashion design. In addition, students are trained on business principles and strategies for entrepreneurship. The programme is blended with aspects of textiles, design, and clothing. The cognitive and learning ability will be harnessed throughout the course with both theoretical and practical approaches.

#### **Opportunities:**

The graduates of this course will have an opportunity to:

- Distinguish themselves as innovative problem solvers and leaders in multidisciplinary settings, making use of a high quality and rigorous Design education that is enriched by a flexible curriculum and interdisciplinary research opportunities
- Excel in diverse career paths in either the Design profession or an alternative field, or succeed in postgraduate studies
- Apply design fundamentals in developing fashion products
- Design an artifact considering public health and safety, and the cultural, societal, and environmental considerations
- Apply appropriate tools and techniques in development of fashion products

### **Highlights**

- Students can select field of core interest from 6th semester
- Fourth year emphasizes on project and management using basic skills acquired in three years
- State of Art Infrastructure with dedicated labs and studios
- Collaboration with Dept. of Handloom and Textiles, Govt. of Karnataka, in setting up the Centre for Garment Design, Manufacturing and Quality Control

## **2. POSTGRADUATE PROGRAMMES**

The M. Des. Programme is of 2 years duration in the full-time route and 3 years duration in part time route. The highlights of M. Tech courses are as described below:

### **a. M. Des. in Product Design**

The consumer product manufacturing sector in India has seen robust growth in recent times and some organizations involved in product research and development are creating avenues in the field of product design for carrying out research on smart machines, composite materials, customer needs and aspirations including consumer emotions and behavior. The skilled work force available in India is recognized globally and many organizations need designers, developers, innovators, manufacturing, testing, and marketing professionals as well as managers with a postgraduate degree in Product Design. This programme is aimed at preparing skilled professionals and human resources equipped with creative skills combined with the knowledge and application aspects of the product design process to meet the demands of the product manufacturing industry including regional, national, and global organizations.

### **Programme highlights:**

- Knowledge on processes involved in the design and development of consumer products
- Training on effective use of form to embody ideas and to communicate their value without compromising on functionality and manufacturing considerations
- Validation of design concepts and incorporating improvements obtained via customer feedback

- Internship programs abroad for giving students global learning experience
- Training and placement support

**b. M. Des. in Fashion Design**

This programme is aimed at preparing skilled professionals and human resources to meet the demands of the fashion industry including other regional, national, and global organizations. It also aims at encouraging the development of new concepts and designs creating avenues for entrepreneurship. The programme enables the students to achieve an integrated understanding of the underlying principles of Fashion Design and develop creative and innovative designs for clothing, apparel, fashion outfits and accessories using manual and digital techniques to pursue a career in Fashion Design.

**Programme Highlights:**

- Knowledge on processes involved in the evaluation of present and future fashion trends and create various fashion collections
- Virtual tools to illustrate designs and create trial pieces of apparel and accessories
- Conceptualization and creation of fashion shows along with merchandising, presentation, and documentation
- Internship programs abroad for giving students global learning experience
- Training and placement support

## **FACULTY OF MANAGEMENT AND COMMERCE**

The Faculty of management and Commerce (FMC) offers a total of 2 Undergraduate and 2 Postgraduate Programmes. The undergraduate courses are of 3 years leading to B.Com. (Hons) and Bachelor of Business Administration (BBA) degrees.

The postgraduate Programmes are of 2 years duration and lead to an MBA and M.Com. Degree. The FMC offers the following Programmes.

### **3. Undergraduate Programmes**

- a. **B.Com. (Hons) - Accounting and Finance:** The main objective of this programme is to impart knowledge, understanding and cognitive abilities in accounting, banking, finance, commerce, and administrative related courses. The programme further focuses on development of competencies and practical skills required for effective problem solving and right decision making in different activities relevant to accounting, banking, finance, commerce, and administration. The programme also embeds courses to train students on personal development and interactive skills with a feel for society. The B.Com. (Hons) Programme is of 3 years duration spread over 6 semesters.
  
- b. **Bachelor of Business Administration (BBA):** The main objective of this programme is to impart knowledge, understanding and cognitive abilities in business administration related courses like accounting, banking, finance, marketing, sales, consumer behaviour, customer relationship and administrative related courses. The programme further focuses on development of competencies and practical skills required for effective problem solving and right decision making in different activities relevant to business administration. The programme also embeds courses to train students on personal development and interactive skills with a feel for society. The BBA Programme is of 3 years duration spread over 6 semesters.

The highlights of B. Com and BBA programme are:

- Faculty with extensive industry experience and graduated from reputed Universities in India and abroad (IISc, IIT, UCLA)
- Industry relevant syllabus designed by academic and industry experts
- Contemporary Teaching methods such as Experiential Learning
- Learning Environment fully adapted to latest online learning such as MS Teams online classes, national and global Massive Online Operated Courses (MOOC)
- Placement Support
- Global learning through tie-ups with leading foreign Universities
- Industry-oriented Projects
- Training by Industry experts
- Leadership Development and Skill Enhancement through workshops, clubs, and competitions

- Support for Entrepreneurship through Ramaiah Technology Business Incubator (RTBI)

#### 4. Postgraduate Programmes

##### a. **Master of Business Administration (MBA):**

Masters degree programme of MSRUAS is designed to impart high-order overview in the chosen subject area. Postgraduates are expected to possess:

1. Advanced knowledge and understanding in the chosen area of specialization.
2. Higher order critical, analytical, innovative, and problem-solving skills
3. Ability to think rigorously and independently; and
4. Transferable skills

The postgraduates are expected to find opportunities in industries, business, and commerce research establishments and even may take up entrepreneurship. With experience, they should be able to take up leadership positions in the chosen career.

##### Specializations Offered in MBA are:

- Marketing Management
- Human Resources Management
- Operations Management
- Financial Management
- Small Business and Entrepreneurship
- Business Analytics
- Banking and Financial Services
- Hospitality Management
- Pharma Business Management

- b. Master of Commerce (M. Com.):** The programme will impart high-order overview in the chosen subject area. The objective of this programme is to develop advanced knowledge and understanding in the chosen area of specialization. The postgraduates are expected to find opportunities in industries, business, commerce research establishments and entrepreneurship.

The highlights of MBA and M. Com Programmes are:

- Faculty with extensive industry experience and graduated from reputed Universities in India and abroad (IISc, IIT, UCLA)
- Industry relevant syllabus designed by academic and industry experts
- Contemporary Teaching methods such as Case Based Teaching, Simulation, Experiential Learning
- Learning Environment fully adapted to latest online learning such as MS Teams online classes, Massive Online Operated Courses (MOOC)
- Global learning through tie-ups with leading foreign Universities
- Placement Support

- Focus on world-class Research
- Successful joint publications with students in international SCOPUS journals, conferences
- Global Internship Opportunities off-campus and on-campus
- Training sessions by Industry experts
- Leadership Development and Skill Enhancement
- Support for Entrepreneurship through Ramaiah Technology Business Incubator (RTBI)

- **2b-1) Master of Commerce (M. Com.) in Accounting and Taxation**

The M.Com. in Accounting and Taxation Programme is structured to produce postgraduates in Commerce with specialized skills and applied competence in theoretical and practical knowledge of standard practices of relevance in Accounting and Tax Planning of Business Enterprise. In this programme, students will be able to explain the essentials principles of contemporary management practices, discuss the concepts in Financial Accounting and Cost accounting and the policies and composition of direct and indirect taxes relevant for a given business. The different external and internal factors influencing business environment are studied in detail.

- **2b-2) Master of Commerce (M. Com.) in Banking and Finance**

The M.Com. in Banking and Finance Programme is structured to produce Postgraduates with the knowledge of standard practices in Finance and Banking divisions of Business Enterprise with a global outlook. The aim of this Programme is to develop Commerce professionals with specialised skills and applied competencies in theoretical and practical knowledge of Banking and Finance catering to the contemporary needs of industry and academia by providing student-centric learning ambience backed with critical thinking and problem solving capabilities. Students can understand the policies and regulations of the central banks and its influence on the operations of nationalized, commercial, and private banks. Different concepts in capital market, investment avenues and portfolio management are discussed. Review of various risks in investment decisions and mechanisms of risk mitigation is discussed.

The Faculty conducts research leading to PhD degree and undertakes sponsored research with Micro Small and Medium Enterprises (MSMEs). The main areas of research are Supply Chain Management, Management of Micro Small and Medium Enterprises, Lean Management and Engineering Operations and Financial Investments. The Faculty publishes more than 25 papers annually and contributes to the University publications- Book of Students Projects Abstracts, a student feedback magazine called Reflections and a biannual technical journal-SAS Tech. Many alumni of the Faculty have been working for industries and business organizations at various levels.

## **FACULTY OF MATHEMATICAL AND PHYSICAL SCIENCES**

The Faculty of Mathematical & Physical Sciences (FMPS) is an integration of all the basic science departments. FMPS comprises of 5 departments:

1. Department of Physics
2. Department of Chemistry
3. Department of Mathematics

The Faculty offers following Undergraduate and Postgraduate Programmes.

### **1. Undergraduate Programmes**

- B.Sc. (Hons)-Physics
- B.Sc. (Hons)-Chemistry
- B.Sc. (Hons)-Mathematics
- B.Sc. (Hons)-Statistics
- B.Sc. (Hons)-Computer Science
- B.Sc. (Hons)-Electronics

The Bachelor of Science honours degree programme with Physics, Chemistry, Mathematics, Statistics, Computer Science and Electronics as major subjects enhances the understanding of fundamental laws of nature, behaviour of chemical and physical systems and develops abilities for mathematical and statistical analysis of physical and chemical systems. In addition, the programme imparts abilities to apply the knowledge gained by study of Physics, Chemistry, Mathematics and Statistics for analyzing real life situations.

The highlights of the programme are:

- This is a three-year (six semester) programme with 148 credits
- In the first two years students study basic courses in Physics, Chemistry, mathematics, and statistics.
- In the third-year students major in Physics, Chemistry, Mathematics, Statistics, Computer Science or Electronics, based on the choice
- The honors programme offers both breadth and depth in science courses
- Students will undergo internship and project work in the third year
- Learner centric and Outcome based Education and World Class Learning Facilities
- Gateway to Global Learning Experience and Emphasis on Applied Learning and Innovation
- Exposure to national and international conferences and workshops

**B.Sc. (Hons)-Physics:** In the first two years students study basic courses in Physics, Chemistry, Mathematics and Statistics. In the third-year students major in Physics

**B.Sc. (Hons)-Chemistry:** In the first two years students study basic courses in Physics, Chemistry, Mathematics and Statistics. In the third-year students major in Chemistry

**B.Sc. (Hons)-Mathematics:** In the first two years students study basic courses in Physics, Chemistry, Mathematics and Statistics. In the third-year students major in Mathematics

**B.S. (Hons)-Statistics:** In the first two years students study basic courses in Physics, Chemistry, Mathematics and Statistics. In the third-year students major in Mathematics

**B. Sc. (Hons) Computer Science:** First year emphasizes on basic science courses. Second and third year emphasizes on core computer courses like: Software Development Fundamentals, Data Structures and Algorithms, Database, machine Learning and Artificial Intelligence.

**B. Sc. (hons) Electronics):** First year emphasizes on basic science courses. In the second- and third-year students study courses in Electronics

## **2. Postgraduate Programmes**

- Applied Solid State Physics
- Optoelectronics
- Nuclear Physics & Technology
- Analytical Chemistry
- Chemistry
- Industrial Chemistry
- Organic Chemistry
- Applied Mathematics

The highlights of these Programmes are:

### **a. MSc in Physics**

- M.Sc. Physics Programme has a strong focus on core courses such as Mathematical Methods of Physics, Classical Mechanics, Quantum Mechanics, Electrodynamics, Statistical Mechanics and Thermodynamics and Electronics and Devices in the first year and advanced courses such as Atomic and Molecular Physics, Nuclear and Particle Physics and Solid State Physics in the second year.
- M.Sc., Physics, with specialization in Applied Solid State Physics includes Solid State Physics-2, Physics of Semiconductor Devices, MEMS, and Nanotechnology apart from common courses.
- Specialization in Nuclear Physics and Technology includes Nuclear Physics, Reactor Safety and Nuclear Waste Management and Nuclear Electronics and Nuclear Medicine and common courses.
- Specialization in Optoelectronics includes Physics of Optoelectronic Devices, Lasers and Fiber-Optic Communication and Nonlinear Optics apart from common courses.

**b. M.Sc. In Chemistry (Industrial Chemistry, Organic Chemistry and Analytical Chemistry)**

- All M.Sc. Programmes have strong focus on basic courses of Physical Chemistry, Organic Chemistry. Inorganic Chemistry, Instrumental Methods and Computation Methods in Chemistry
- MSc Industrial Chemistry Specialization courses include Chemistry of Agrochemicals, Textiles and Polymers, Chemistry of Industrial Minerals: Petroleum Chemistry, Chemistry of Oils, Fats, Surfactants and Coatings
- M.Sc. (Analytical Chemistry): Specialization courses include Data Analysis and Statistical Inference: Advanced Analytical Chemistry Techniques Analysis of Biopharmaceuticals and Foods, Environmental Analytical Chemistry
- M.Sc. (Organic Chemistry): Specialization courses include Retrosynthetic, Stereochemical and Spectroscopic Analysis: Photochemical Pericyclic and Organocatalytic Reactions: Natural Products and Green Synthetic Methods: Advanced Heterocyclic Chemistry and Pharmaceutical Products Synthesis
- Emphasis on Industrial Visits, Conferences, Workshops, Guest Lectures by Experts from Industry. Reputed R&D institutes, Internships to strengthen exposure to outer world
- World Class Learning Facilities
- Training and Placement Support
- Emphasis on Hands on Laboratory Skills

**c. M. Sc. Applied Mathematics**

- **M.Sc. in Applied Mathematics is a two year (four semester programme with 80 credits**
- M.Sc. programme in Applied Mathematics emphasizes the Critical, Analytical and Problem-Solving skills to equip the students to pursue their scientific and research career
- Emphasis on visits to reputed R&D institutions, Conferences, Workshops
- Guest Lectures by Experts from academics and Industry,
- Internships to strengthen exposure to outer world
- M.Sc. (Applied Mathematics) courses include: Mathematical analysis, Numerical Analysis, Theory of Ordinary and Partial differential equations; Fluid Mechanics, Machine learning, Probability and Stochastic Process
- Emphasis on programming using Matlab/Python for better understanding of abstract and applied concepts in Mathematics
- World Class Learning Facilities
- Training and Placement Support
- Emphasis on Hands on Laboratory Skills

## **FACULTY OF LIFE AND ALLIED HEALTH SCIENCES**

The Faculty of Life and Allied Health Sciences (FLAHS) offers a total of 7 Undergraduate and 5 Postgraduate programmes. The Undergraduate programmes are of 3 years duration and lead to a B. Sc. Degree while the postgraduate programmes are of 2 years duration and lead to an M. Sc. Degree. FLAHS comprises of three Departments:

- Department of Biotechnology
- Department of Food Technology
- Department of Allied Health Sciences

### **Department of Biotechnology**

#### **1. Undergraduate Programmes**

**B.Sc. (Hons) Biotechnology-** The Bachelor of Science honours degree programme in Biotechnology imparts knowledge and understanding of biological systems and their behaviour for various inputs/stimuli originating from the surrounding environment. The Programme also provides sufficient understanding and cognitive abilities to design, develop and incorporate scientific methods, techniques, and processes for biological systems of study to achieve the desired results. In addition, the programme imparts knowledge and training to develop transferable skills and entrepreneurship abilities.

The highlights of the programme are:

- Courses offered are core courses, ability enhancement courses and electives Imparting knowledge and understanding of biological systems and their behaviour for various inputs/stimuli originating from the surrounding environment.
- Providing ample understanding and cognitive abilities to design, develop and incorporate scientific methods, techniques, and processes for biological systems of study to achieve the desired results.
- State-of-the-art laboratory research facilities, Highly qualified, and experienced faculties in the respective domains
- Industrial visits, Guest lectures, Entrepreneurial skill development
- Group projects, Publication and Summer internship

#### **2. Postgraduate Programmes**

- a. **M.Sc. Biotechnology:** M.Sc. in Biotechnology is a postgraduate programme with a strong aim to acquaint aspiring students with a foundation and first degree training to make them ready for research assistants/associates, marketing executives, maintenance engineers, computational analysts and even administrators in Biotechnology industries. Courses offered to all branches of B.Sc. Life Science students, viz. Botany, Zoology, Microbiology, Life Science, Biotechnology, Genetics etc. Different modern and upcoming courses like Synthetic Biology, Stem Cell and Regenerative Medicine, Biotherapeutics,

Molecular Diagnostics in the programme makes it distinctive from any other similar Programmes in other Universities

The highlights of the programme are:

- Specialized Subject Based on Current Research Trends
- Highly Qualified and Experienced Faculties
- State-of-the-Art Laboratory Facility
- Industry Oriented Course Curriculum
- Students Specific Research Innovation Project During MSc
- Tie-up with Several Top-Rated Biotechnology Industry
- MSc Dissertation at Biotechnology/ Pharma Industry

- b. **M.Sc. Molecular and Cellular Biology:** M.Sc. in Molecular and Cellular Biology is a postgraduate degree programme offered to all branches of B.Sc. Life Science student viz. Botany, Zoology, Microbiology, Life Science, Biotechnology and Genetics. The M.Sc. programme will help students get skill viz. preparing and dispensing precisely formulated solutions even at microliter quantities, using electrophoresis, blotting, chromatography and centrifugation equipment, studying nucleic acid hybridization in a range of formats, purifying, modifying and analysing DNA, RNA and proteins, analysing microscopy with in situ hybridization, immunocytochemistry and fluorescent protein technologies to analyse gene and protein expression and function. This course aims in preparing students for careers in fields that require advanced knowledge of Molecular and Cellular Biology, those that relate to human health and welfare. Students will be acquainted with the concepts and applications of the Molecular and Cellular Biology related to human health, disease, and treatment, differentiating it from the existing Biology program.

The highlights of the programme are:

- Advanced Subject Based on Current Research Trends
- State-of-the-Art Laboratory Facility
- Research Driven Course Curriculum
- Students Specific Research Innovation Project During MSc
- Collaboration with Industry for student training and research project
- MSc Dissertation in collaboration with Top Academic Institute of India
- Highly qualified, and experienced faculties in the respective domains

#### **Department of Food Technology:**

Department of Food technology deals with various technologies employed from the time of harvest to the time of consumption of food products. The programme focuses on science of food, it's processing, product development, storage, preservation, and packaging. It also deals with food safety, quality and distribution aspects considered till it reaches consumers.

## 1. Undergraduate Programmes

**B.Sc. (Hons.) Food Processing and Technology:** B.Sc. (Hons.) in Food Processing and Technology is an undergraduate degree programme designed to create motivated, energetic and creative graduates to fill the roles of food quality control / quality assurance officers, production engineers, maintenance engineers, marketing executives and administrators. They can seek employment as teachers, professionals, independent practitioners/consultants, and entrepreneurs. The programme acts as a foundation degree and helps to develop critical, analytical, and problem-solving skills at first level. The foundation degree makes the graduates employable in food technology and food processing industries and to assume administrative positions in various types of organizations. With additional qualifications and training help the graduates to pursue a career in academics or scientific organizations as a researcher

The highlights of the programme are:

- Imparts Knowledge and understanding of food science, food biochemistry, product development, processing, packaging, and supply chain management.
- Provides cognitive abilities to design and develop technologies for food processing, preservation, and packaging.
- Provides a holistic perspective on legal and safety requirements for product and process development.
- Imparts knowledge and training to develop transferable skill and entrepreneurship abilities

### Postgraduate Programme

a. **M.Sc. Food Science and Technology:** M.Sc. Food Science and Technology is a postgraduate degree programme designed to create skilled personal suitable for academics, research and to meet industrial needs. Major courses in the programme includes Food Processing and Packaging, Food Additives and Preservatives, Food Chemistry, Nutraceuticals and Functional Foods, Food Quality & Sensory Analysis, Baking and Confectionery Technology, Millet Processing Technology Dairy Engineering and Fermentation technology.

The highlights of the programme are:

- Programme aims at imparting knowledge of Food-Biochemistry, Food Chemistry and Food Microbiology
- Aims at knowledge and understanding of technology of vegetables, fruits, plantation crops, meat, poultry, dairy and sea foods, bakery, and confectionery.
- Develops abilities to design technologies for food processing and food preservation
- To achieve an ability to design and develop food packaging and distribution
- To train students on use of various instrumentation for the evaluation of food quality and safety
- Conduction of scientific experiments and document scientific investigations
- Education on professional ethics, economics, social sciences, interpersonal and communication skills relevant to professional practice

- A general perspective on lifelong learning and opportunities for a career in industry, scientific organization, education, business, and commerce is provided.

### **Department of Allied Health Sciences:**

The Department offers the following Programmes. Each course duration is of 3 years with 1-year internship.

#### **1. Undergraduate Programmes:**

**a. B.Sc. (Hons.) Cardiac Care Technology (CCT):** In the first year Core Courses are offered and student observer ship (clinical exposure) starts from 2nd semester. Training in research group project is provided in well-equipped laboratories. Hands on training in tertiary care hospitals with state-of-the-art equipment and facilities is given. There is an excellent scope of employment both nationally and globally, in super specialty corporate hospitals.

The highlights of the programme are:

- Students can Test pas for heart problems Work as part of a multidisciplinary team
- Take care of those suffering from cardiovascular disease
- Use and maintain medical equipment and machines used in the field + Acc band and will
- Study emergency invasive procedures
- Insert catheters and use pacemakers in practical settings
- Study cardiac related procedures
- Observe ne the corrects way to perform cardiac procedures

**b. B.Sc. (Hons.) Dialysis Therapy Technology (DTT):** In this programme, training on dialysis treatment for kidney failure patients is given. The knowledge of operating and maintaining dialysis machines and monitoring patient is some of the important issues. The Days Therapy Technologist works as a member of multidisciplinary team along with the Head of Department Senior Dialysis Therapy Technology to plan implementation of the dialysis prescription perform haemodialysis, manage various intradialytic complications and document patient data.

The highlights of the programme are:

- Accomplished professionals in Dialysis Therapy Technology with a specific emphasis on clinical skills and technical knowledge
- Competent in knowledge and procedural skills necessary to deliver a high standard of care to the patients with chronic kidney disease
- Knowledgeable to conduct research in the field of dialysis
- Able to provide all aspects of care for patients undergoing chronic hemodialysis and continuous ambulatory peritoneal dialysis (CAPD)

- c. **B.Sc. (Hons.) Medical Radiology and Imaging Technology (MRIT):** A medical imaging technologist is a trained health professional who performs medical imaging by producing high quality X - ray pictures or images used in disease diagnosis and injury assessment and treatment.

Highlights of the programme are:

- Clinical exposure starts from 2nd semester and Training in research-group project in well-equipped laboratories. Hands on training in tertiary care hospitals with state of art equipment and facilities. Excellent scope of employment both nationally and globally, in super specialty corporate hospitals.
- Academic and research facilities available to pursue M.Sc. and Ph.D.
- The emphasis during the initial year is on the academic content establishing a strong scientific basis and engagement with the course principles. During the second and third years of training, emphasis is on process to refine the acquired theoretical knowledge and its application to clinical practice
- Students trained by experienced and professionally qualified faculty in tertiary care hospitals. They trained to operate extremely technologically advanced equipment such as CT (computed tomography), MRI (magnetic resonance imaging), DEXA, Mammography, CR, DR, fluoroscopy, and digital mobile X-ray machines
- Job Opportunities are in a variety of settings in both rural and urban areas including Hospitals, Diagnostic and Medical Labs, Medical Records and Transcription organizations, Clinical and Medical Research organizations, Pharmaceutical and Bio-Tech companies, Medical equipment, and device companies
- Special Features of Program offered include:
  - Radiographer, Radiological Technologist, X-ray Technologist, CT scan Technologist, MRI Technologist, Mammography Technologist, Cathlab Technologist, Ultrasonography Technologist, Radiological Safety Officer, Interventional Technologist, Quality control Technologist, PACS manager, Sales and marketing of radiology industry, Other Administrative posts in Medical Imaging department & hospital. Teaching & research faculty in Medical colleges Research Scientists in Medical imaging industry

**B.Sc. (Hons.) Optometry (OPT):** Optometry programme comprises of a health care profession that is autonomous and concerned especially with examining the eye for defects and faults of refraction, Prescribing corrective lenses, Eye exercises and/or visual rehabilitation care for visually impaired, Diagnosing diseases of the eye, treating such diseases or referring them for treatment.

Program Highlights are:

- Hands on Training: At Ramaiah University, we have a fully equipped state of the art modern Ophthalmology and Optometry OPD, community outreach programmes and camps being conducted on a regular basis where students get to interact with patients directly and learn the skills necessary to be a successful clinician

- Curriculum Development: Here at Ramaiah University, we have developed the Optometry curriculum with experienced academicians and medical educationists both from the University as well as industry experts. This "Praxis" approach builds our students to be 'industry ready as they graduate
  - Experience University: Ramaiah University provide the students an experience of international learning environment with students and faculty members hailing from across the globe and thus enriching the knowledge sharing.
  - Interdisciplinary Approach: Multidisciplinary approach beyond health and allied health sciences is provided. Students get to learn how the healthcare and patient referral system works and develop inter and intra professional networks in their career.
  - Internship: Students get do their fourth year clinical internship at Ramaiah medical college or any other affiliated colleges/industrial postings of their choice.
- d. B.Sc. (Hons.) Operation Theater Technology (OTT):** Operation theatre technologist looks after all the work and management of the operation theatre which includes managing the patients in & out of operation theatre, looking after all the surgical equipment, arrangement of operation theatre table, dressing table, anesthesia table as well as management of the staff. As the surgical branch has various specialty including General Surgery, OBG. Cardiac, Ortho and genito-urinary, the OT technologist needs to know about these various specialties.

Program Highlights are:

- Setup, check, and maintain anesthesia machine, monitors life support equipment like airway equipment, ventilator, emergency equipment, defibrillator, anesthetic and resuscitation drugs
- Order, maintain and keep records of all anesthesia equipment and drug
- Assist Anesthetist in patient procedures like setting up of invasive lines, airway management, setting up of monitors and administer anesthesia to patient
- Assist during emergency situations by assisting in basic and advanced life support, critical events
- Prepares and maintains operation table (light, electric cautery, tourniquets etc.)
- Job Opportunities: After completion of the program at Ramaiah University, the individual will find a challenging career • In Hospitals, Nursing Homes. Trauma /Emergency Centres, Intensive Care Units, CSSD etc.

Overseas where their qualifications, training and experience are highly regarded. With further experience, graduates may be employed by medical equipment manufacturers and development specialists Graduates have good employment prospects, and will enter a field in which the demand for professionals has increased in recent years and will keep on

increasing due to increased focus on patient safety and quality assurance.

### **Postgraduate Programmes**

- a. **Masters in Hospital Administration (MHA):** The aim of the programme is to produce healthcare administrators with proficiency in healthcare facility planning and management of services to achieve organizational goals within the ethical and legal framework.

Programme highlights are:

- The graduates with a sound foundation in management, and a strong sense of business ethics and societal responsibility, can assume leadership roles to meet the unique and dynamic challenges of the health care sector not just locally, but in a global context
- This programme offers the students a unique advantage of learning the basics of management, and gaining practical, hands-on experience in management of services in a state-of-the-art, tertiary super-specialty hospital under hospital administrators' guidance and supervision to develop the necessary managerial skills
- Specialized training in soft skills has been incorporated into the programme to enable the students to remain relevant and competitive in the dynamic healthcare sector
- With its research orientation, the programme further fosters creative thinking, critical analysis, and innovation, thus contributing to the creation of a knowledge economy

**Master's in Public Health (MPH):** The courses have been designed with a focus on performance-based outcomes pertaining to operation theatre technology. The learning goals and objectives of the undergraduate education program is based on the performance expectations. Using the framework, students will learn to integrate their knowledge, skills, and abilities in a hands-on manner in a professional healthcare setting.

### **Highlights of this programme are:**

1. Demonstrate ability to prepare and maintain Operation Theatre
2. Demonstrate ability to maintain equipment support in an acute care environment
3. Identify and inspire to maintain a sterile field and Follow infection control policies and procedures
4. Manage and maintain theatre equipment and demonstrate ability to prepare the patient for operative procedures
5. Provide intra-operative equipment and technical support
6. Demonstrate skills and knowledge to assist anesthetist in handling emergencies outside of OT Room
7. Manage hazardous waste and follow biomedical waste disposal protocols
8. Ensure availability of medical and diagnostic supplies

## **FACULTY OF DENTAL SCIENCES**

The Faculty of Dental Sciences (FDS) comprises of Departments of Oral Medicine and Radiology, Periodontics, Oral & Maxillofacial Surgery, Conservative Dentistry and Endodontics, Esthetic Clinic, Orthodontics, Oral Pathology and Microbiology, Public Health Dentistry, Pedodontics and Preventive Dentistry and Prosthodontics. FDS offers a 4-year undergraduate programme including one year internship leading to the Bachelor of Dental Surgery (BDS) degree and a 3-year postgraduate programme leading to the Master of Dental Surgery (MDS) degree.

1. **Bachelor in Dental Surgery (BDS):** This is a four year plus one-year compulsory rotatory internship program with 250 credits (six semester) programme with 148 credits. The programme aims to produce competent and skilled dental graduates who are also responsible leaders of society with entrepreneurial and managerial skills. The graduates are equipped with critical, analytical and problem solving skills and ability to think independently to pursue a career in Oral health care profession.

The highlights of the programme are:

- Along with the core courses, students also have ability enhancement courses like law for dental professionals, Basic Life support, Patient safety curriculum and practice observership
  - Students will undergo undergraduate research project work and community orientation programme in the third year
  - Professional core elective courses for advanced skill learning during internship
  - Learner centric and outcome-based education
  - World class learning facilities
  - Gateway to global learning experience
  - Emphasis on Applied Learning and Innovation
  - Exposure to national and international conferences and workshops
2. **Master of Dental Surgery (MDS):** This is a three-year programme with 180 credits. The programme aims to prepare the students for a career as an MDS graduate in their chosen specialization. FDS offers the MDS degree in the following specialties:
    - a. Oral Medicine and Radiology
    - b. Periodontics
    - c. Oral and Maxillofacial Surgery
    - d. Conservative Dentistry and Endodontics
    - e. Orthodontics and Dentofacial orthopedics
    - f. Oral Pathology and Microbiology
    - g. Public Health Dentistry
    - h. Pedodontics and Preventive Dentistry

i. Prosthodontics, Crown and Bridge

The highlights of the programme are:

- Curriculum as stipulated by DCI is divided into course specialization modules, research modules, Faculty common modules and elective modules
- Course specialization modules are integrated both vertically and horizontally for sequential learning
- Research modules cover from research methodology, library and main dissertation to presentation and publication
- Students are encouraged to participate in group research projects in PG research exhibitions of the university
- Value added courses such as law for dental professionals, clinical photography, communication skills and basic life support are also part of the curriculum
- Teacher training module including pedagogical exercises are part of elective training
- Students are encouraged to train in another institution in India or abroad for 3 weeks for experiential learning.
- Learner centric and outcome based education
- Exposure to national and international conferences and workshops

## **FACULTY OF PHARMACY**

The Faculty of Pharmacy (FPH) comprises of Departments of Pharmacognosy, Pharmaceutical Chemistry, Pharmaceutics, Pharmacology, Pharmacy Practice and a Drug Design and Development Centre. FPH offers a 4-year undergraduate programme leading to the Bachelor of Pharmacy degree (B. Pharm.), a 2-year duration postgraduate programme leading to the Master of Pharmacy degree (M. Pharm.) and also a 6-year duration Doctor of Pharmacy degree (Pharm. D).

1. **Bachelor of Pharmacy (B. Pharm):** This is a four year degree programme blending the art of science, technology and human relationships in a unique fashion. The curriculum offered at B. Pharm. level is outcome based and helps students to think critically and acquire practical skills for smooth transition from academics to competitive real life work environment. The programme goal is to produce fully trained pharmacists with knowledge and understanding of formulations, manufacture and evaluation of dosage forms; and the ability to think independently, to pursue a career in Pharmacy.

The highlights of the programme are:

- Students are taught to design drugs and drug delivery systems to meet desired needs considering public health and safety, and the cultural, societal, and environmental considerations
  - A unique blend of the art of science, technology and human relationships involved in the study of pharmacy
  - Learner centric and outcome based education
  - World class learning facilities
  - Gateway to global learning experience
  - Emphasis on applied learning and innovation
  - Exposure to national and international conferences and workshops
2. **Master of Pharmacy (M. Pharm.):** This is a two year programme that aims to prepare the students for a career as an M. Pharm. graduate in their chosen specialization. FPH offers the M. Pharm. degree in the following specialties:
    - a. **M. Pharm. in Pharmacognosy:** This programme aims to create postgraduates with an advanced knowledge both in theoretical and applied topics; high order skills in analysis, critical evaluation and professional application; who think differently and independently to solve complex problems related to research and pharmaceutical processes.

The highlights of the programme are:

- Students are encouraged to think differently and independently to solve complex problems related to research and pharmaceutical processes

- Aimed to emphasize the concepts in the isolation of novel compounds and design of dosage forms
- Importance given to research projects based on industrial needs and in terms of novelty for patenting the application
- Structured to impart the students to take independent professional responsibilities and acquire necessary skills to compete with their global counterparts
- World class learning facilities with learner centric and outcome based learning
- Placement support

**b. M. Pharm. in Pharmaceutical Chemistry:** The aim of the programme is to produce proficient postgraduates with advanced knowledge and skills in designing, synthesizing and analysis of medicinal agents and pharmaceuticals.

The highlights of the programme are:

- Students are encouraged to think differently and independently to solve complex problems related to research and pharmaceutical chemistry
- Aimed to emphasize research projects based on rational drug design
- Importance given to projects based on industrial needs and in terms of novelty for patenting the application
- Structured to impart the students to take independent professional responsibilities and acquire necessary skills to compete with their global counterparts
- World class learning facilities with learner centric and outcome based learning
- Placement support

**c. M. Pharm. in Pharmaceutics:** This programme is aimed to emphasize the concepts in the design of advanced novel pharmaceutical dosage forms. Importance will be given to research projects based on industrial needs and in terms of novelty for patenting the application. The curriculum is structured to impart the students to take independent professional responsibilities and acquire necessary skills to compete with their global counterparts.

The highlights of the programme are:

- Students are encouraged to think differently and independently to solve complex problems related to research and pharmaceutical dosage forms
- Aimed to emphasize preformulation studies for new drug entities and drug delivery systems
- Importance given to projects based on industrial needs and in terms of novelty for patenting the application
- Structured to impart the students to take independent professional responsibilities and acquire necessary skills to compete with their global counterparts
- World class learning facilities with learner centric and outcome based learning
- Placement support

**d. M. Pharm. in Pharmacology:** The aim of the programme is to produce postgraduates with advanced knowledge and understanding of pharmacology; higher order critical, analytical, problem solving and transferable skills; ability to think rigorously and independently to meet higher level expectations of pharmaceutical industry, academics, research or take up entrepreneurial route.

The highlights of the programme are:

- Hands-on training in various animal models and determine the effects of drugs using animal models
- Practical inputs in pharmacokinetic studies of various drugs and formulations in animals to establish in-vitro and in-vivo correlations
- Practical knowledge in various analytical techniques used in molecular biology
- Structured to impart the students to take independent professional responsibilities and acquire necessary skills to compete with their global counterparts
- World class learning facilities with learner centric and outcome based learning
- Placement support

**e. M. Pharm. in Pharmacy Practice:** The aim of the programme is to produce postgraduates with advanced knowledge and understanding of pharmacy practice; higher order critical, analytical, problem solving and transferable skills; ability to think rigorously and independently to meet higher level

expectations of pharmaceutical industry, academics, research or take up entrepreneurial route.

The highlights of the programme are:

- Students are taught to focus their attention in the fields of hospital and community pharmacy and guided to take up the jobs in the hospitals after their graduation
- Delivers quality pharmacy education to the students, which helps them get tuned to work in different research areas such as pharmaco-economics, pharmaco-epidemiology and pharmacovigilance
- Structured to impart the students to take independent professional responsibilities and acquire necessary skills to compete with their global counterparts
- World class learning facilities with learner centric and outcome based learning
- Placement support

### **3. Doctor of Pharmacy (Pharm. D.)**

The Pharm D Programme is an emerging concept globally focusing mainly on improving health care system for a better drug therapy by assisting medical practitioners. It is a clinical oriented curriculum where the students would be trained to provide information about diseases, drugs and lifestyle modifications to the patients in a hospital environment to improve the patient's health condition. There is an immense need for the Pharm D course in our country where enormous drug related problems, irrational drug use and non-compliance to therapy among patients exist which can be tackled by properly trained clinical pharmacists.

The M.S.Ramaiah College of Pharmacy, now a constituent of RUAS as Faculty of Pharmacy has been in existence for over 2 decades. Over the years, Faculty of Pharmacy of RUAS has grown and evolved as one of the Premier Institutions in the state of Karnataka. It has very good infrastructure, note worthy laboratory facilities and also associated with 1500 bedded multispeciality hospitals with experienced and competent staff, within the campus. During the last two decades it has produced over 1000 graduates and 110 Post graduates. The presence of other Faculties of Applied Sciences of the University will facilitate the students to experience more than the conventional curriculum.

The Faculty of Pharmacy at RUAS offers the Pharm D programme to produce quality pharmacists with good knowledge on pharmacotherapy, critical thinking, analytical and problem solving skills.

## **FACULTY OF HOSPITALITY MANAGEMENT AND CATERING TECHNOLOGY**

The Faculty of Hospitality Management and Catering Technology (FHMCT) offers a four-year undergraduate programme leading to Bachelor of Hotel Management (BHM) and a 2-year duration postgraduate programme leading to MBA in Hospitality Management.

The courses in Hospitality Management and Catering Technology have been designed based on successful Programmes offered by reputed hospitality Schools and universities in the west as well as in the east. However, the curriculum reflects the Indian hospitality that is embedded in its culture. The curriculum offered is outcome based and helps students to develop critical thinking, creative and innovative abilities and helps to develop transferable skills for a smooth transition from academics to real life. Students are given experience of real-life problem-solving skills through assignments and role plays. Opportunities are provided for students to do their internship in India or abroad depending on the student's interest.

The Faculty is well connected with 3- and 5-star hotels and resorts in the city of Bangalore and elsewhere. The students are given training and experience in the hospitality industry and over the years the students have successfully been placed in the major hotels and resorts spread across the world.

### **Undergraduate Programme**

#### **Bachelor of Hotel Management (BHM)**

The aim of the Bachelor of Hotel Management degree programme is to produce hotel management graduates with outstanding managerial skills, passion for creativity and innovation, professionalism and a strong sense of business ethics to meet the human resource requirement of hospitality sector.

The programme highlights are:

- The philosophy of the Bachelor of Hotel Management- programme of MSRUAS is to offer an extensive curriculum to provide the global hospitality sector with graduates who possess appropriate attributes and attitudes for a wide range of management positions.
- The programme focuses on a contemporary technological approach to hotel operations coupled with a strong foundation in management concepts. It also emphasizes on proficiency in foreign languages, holistic personality development, ethical values and development of an inquiring mind.
- M. S. Ramaiah College of Hotel Management, a constituent faculty of MSRUAS, is a 27 year-old pioneer institution in Hotel Management education in the private sector in India.
- With continuous upgradation, the college has state-of-the-art infrastructure and facilities, which include well- equipped kitchens, restaurants, guest rooms and front desk areas for operational skill development. Digital language laboratories, computer laboratory with property management system software, class rooms with audio-

visual aids and a library with an exhaustive collection of resources complement the above facilities.

- For the overall development of students, cultural and sports activities are facilitated. To give the students an edge over their contemporaries, they are intensively trained for recruitment interviews with an ongoing personality development programme.
- The placement cell has been successful in consistently achieving 100% placement over the years. More than 50 companies including hotels, stand-alone restaurants, facility management companies, airlines, retailers, banks, multi-national companies and service apartments visit our college for campus recruitments. Our alumni hold key positions in the hospitality industry world over.

### **School of Social Sciences**

**Department of Public Policy:** Department of Public Policy offers the programme in M.A. in Public Policy.

Highlights of this programme are:

- Carefully designed curriculum the programme aims to prepare students to critically analyse the ideas, mechanisms, practices and outcomes that shape public policy problems;
- A research-based programme enabling evidence-based teaching and research;
- Provide purposive programmatic solutions, and undertake critical and impactful research;
- Become reflective practitioners in public affairs through careers in the government, development organizations, social enterprises, think tanks, the media and other agencies involved in public affairs;
- The programme integrates the fields of public policy and governance to advance our understanding of public problem solving in India;
- Prepare students to become critical and analytical thinkers who can develop effective and equitable solutions to public policy and governance challenges.

## Research at RUAS

### Doctoral Research Programmes

RUAS has a strong focus on Applied Research. The research problems come from industries, research establishments and business organizations. Students can opt for Doctoral Programme leading to Ph.D. degree through full time or part time route. Doctoral Programme is offered in:

- Faculty of Engineering and Technology
- Faculty of Art and Design
- Faculty of Management and Commerce
- Faculty of Mathematical and Physical Sciences
- Faculty of Life and Allied Health Sciences
- Faculty of Dental Sciences
- Faculty of Pharmacy
- Faculty of Hospitality Management and Catering Technology
- School of Social Sciences

The Doctoral Programme offered at RUAS is well structured and motivated candidates will be able to complete their Ph.D. in the defined period. The faculties have produced more than 20 Ph.D.s. The details of the Doctoral research programme leading to PhD degree are available on the University website.

### Sponsored Research

The University is actively involved in seeking financial grants from National and International organizations in Government, Public and Private Sectors to carryout research and generate new knowledge for the benefit of the Society. Research Organizations like ISRO, DRDO, DST, DBT, ICMR, VGST, KCTU etc. have provided grants for advanced research in the past. So far, the University faculties have undertaken more than 120 funded research projects and have filed more than 150 patents.

Some of the research themes of the University are:

AI and ML in Health and Engineering. Sciences; Computational Mechanics; Energy and Environment; Biomaterials, Tissue Engineering and Implants; Robotics and Automation; Signal and Image Processing; Control Engineering; Materials Engineering; Biomedical Engineering and Biomechanics; Engineering Design and Rural Products Design; Hypersonics; Fluid Dynamics and Aerodynamics; Automotive Technologies; Micro Air Vehicles; Manufacturing Technologies; Optoelectronics; High Energy Lasers; Human Computer Interactions; Electric Motors, drives and Electromagnetics; Sensors and Micro Electro Mechanical System; Microelectronics and CMOS Technology; Graphene and Carbon Nanotechnology; Graphics and Visualization; Software Engineering and ICT Networks and Distributed Systems; Plasma and Lasers; Construction Engineering and Management; Life Sciences and Biotechnology; Social Sciences

### Centers of Excellence (CoE)

In order to Empower, Create and Synergize research groups across Ramaiah Group of Institutions to address societal relevant problems of National importance, the University has initiated two CoEs:

1. AI, ML and Autonomy
2. Computational Mechanics

## Research Centers

Ramaiah University of Applied Sciences conducts its research through the following specialized research Centers

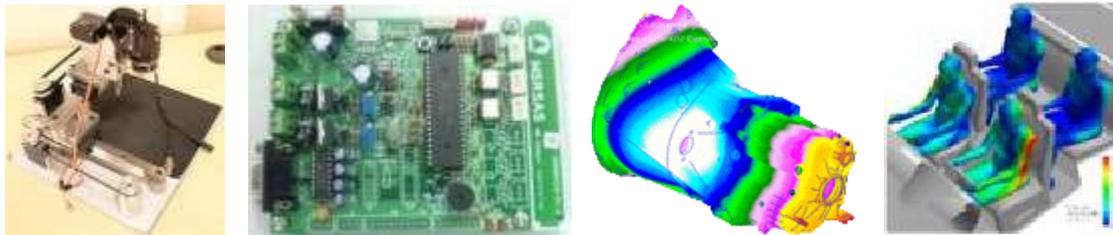
3. Automotive Technologies Research Centre
4. Centre for Aeronautical and Micro Air Vehicles Research
5. Energy and Power Systems Research Centre
6. Sanitation, Waste Management and Environmental Engineering Research Centre
7. Centre for Machine Learning and Computational Intelligence
8. Centre for Control Systems and Robotics Research
9. Centre for Biomedical Systems and 3D Printing Research
10. Centre for Signal Processing and Communication System Research
11. Structural Design and Analysis Centre
12. Composite Materials and Technologies Research Centre
13. Research Centre for Contemporary Tools and Techniques in Industrial Design
14. Innovation and Entrepreneurship Development Research Centre
15. Photonics Research Centre
16. Centre for Batteries and Biofuel Research
17. Software Engineering and Big Data Modelling Research Centre
18. Nutraceutical and Nutrition Research Centre
19. Oral Cancer Research Centre
20. Biomaterials Research Centre
21. Dental and Maxillofacial Modelling and Simulation Centre
22. Drug Design and Development Centre
23. Pharmacological Modelling and Simulation Centre

## 10. Techno Centre

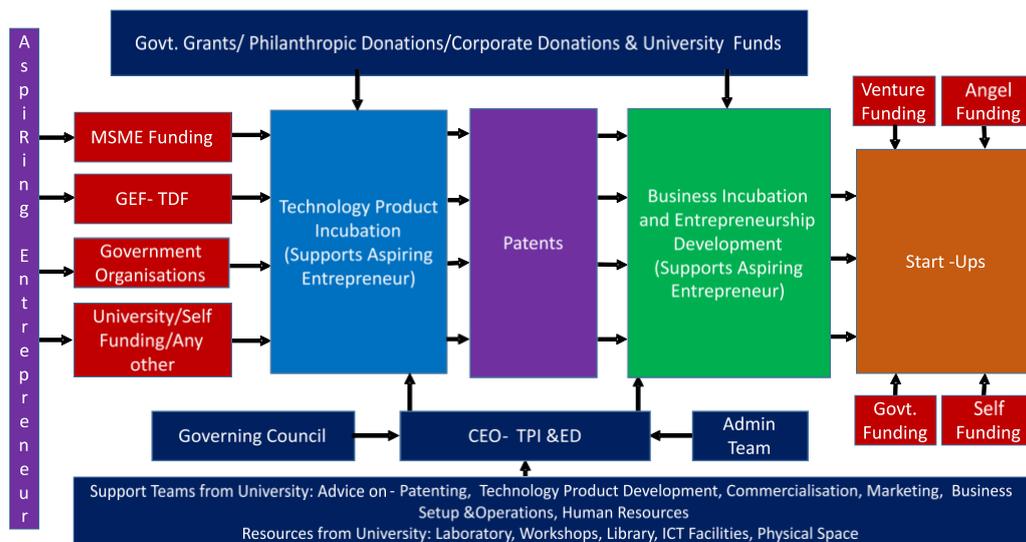
Techno Centre manages Consultancy, Product Design and Development, and Business Incubation activities. Directorate harnesses the research and problem-solving abilities that are available with the members of faculties, in addition to the teaching resources and practical skills to work on real life projects. Industries, Businesses and Research and Development organizations who may want to work on challenging problems; interested in developing a new product concept; interested in new product development and commercialization or would like to invest in new technology development can access the ecosystem that exists on the campus to meet their requirements. Students and Entrepreneurs alike are also provided access to the University's resources for this purpose. The Techno Centre aims to bring the University, Industry, Business and Communities together for their mutual benefit.

Techno Centre is comprised of following Centers

- Engineering Design and Analysis Centre
- Electronic System Development Centre
- New Product Design and Development Centre
- Centre for Mechanical Prototype Development
- E-Med Centre
- Technology Product Incubation & Entrepreneurship Development Centre



The model for Technology Product Incubation and Entrepreneurship Development is as described below



## 11. Training & Lifelong Learning at RUAS

The Directorate of Training and Lifelong Learning is a vertical of the University involved in conducting training and skill upgradation programs that come outside the gamut of the academic curriculum. The Directorate offers these skilling Programmes to aspiring professionals, fresh graduates and reskilling and upskilling Programmes to practicing professionals from industry, business and academia. The Directorate conducts Credit based and noncredit based courses.

The credit-based courses are,

1. Bachelor of Vocational Degree Programmes
2. Post Graduate Certificate in Professional Practice- Dentistry
3. User Oriented Post Graduate Courses

The noncredit based courses include,

1. Corporate Training Programme
2. Advanced Certificate Programme
3. Modular Training Programme
4. Fellowship Programmes
5. Skill Training Programme
6. Seminars / Workshops
7. Proficiency Programme
8. Short Term Cookery Courses

### Credit Based Courses - Bachelor of Vocational Degree Programmes

Bachelor of Vocational Degree Programme (B.Voc) is part of Skill India initiative and UGC's efforts to promote skill based higher education in India. The B.Voc course with 70% focus on skill development and 30% focus on theoretical knowledge prepares the student for skill sets required for that industry or entrepreneurial role. The course curriculum is structured such that students will be able to get a job opportunity at the end of each year.

Passenger Car Repair & Maintenance	Office Administration
Machine Tool Operation & Maintenance	Retail Marketing
Product Design & Modelling	Banking & Insurance
Garment Manufacturing & Quality Control	Accounting & Logistics
Culinary Operations	Photography & Visual Effects
Dental Hospital Assistance	Home Care & Nursing Assistance

**Passenger Car Repair & Maintenance** is a B.Voc., Degree programme with specialization in automotive repair and maintenance and is designed to train and produce skilled automotive repair and maintenance workforce to handle the advanced automotive technologies. The students are trained as per requirements of the industry, thus helping them procure jobs with ultimate working satisfaction. As the course includes managerial subjects and principles, it will be an added advantage to the student to be able to grow as a technically skilled entrepreneur.

**Machine Tool Operation & Maintenance:** The Machine Tool industry is moving towards increasingly sophisticated CNC machines, driven by demand from key user segments, such as, automobiles and consumer durables, Aerospace etc. While the estimated manpower requirement in this segment in 2017 is said to be close to 20 lakh people, the same is expected to double by 2022. Therefore, skill training of people in the Machine tool Operation, repair and maintenance is the need of the hour to prepare human resource for the Machine tool industry. 70% of India's machine tools are produced in Peenya in Bangalore and therefore, there is close collaboration with industry for the conduct of this course.

**Culinary Operations:** Catering operations have exhibited a phenomenal growth over the last few years and are a significant contributor to economic growth. They employ millions of people who are driven by

passion, creativity and determination. The culinary operations course integrates theoretical, practical and innovative aspects of food production. Fundamental concepts that progress to advanced techniques in Food Production operations with emphasis on hygiene, nutrition, work ethics and other ancillary elements will contribute to the overall career growth of the individual, both as a professional chef and as an entrepreneur.

**Product Design & Modelling:** Indian Engineering and Design sector has witnessed a combined growth rate of about 15 percent touching US\$ 26.4 billion over the last year driven by increased national and global demand for its produce. Many local and international firms have set up R&D and Design centers in India to develop innovative products and offerings. This course provides the prospective students with a strong foundation of the art of creating scaled models and prototypes of the concepts envisioned by prestigious R&D and Design centers in India and abroad.

**Garment Manufacturing & Quality Control:** The textile industry contributes about 14 percent to industrial production and four percent to the gross domestic product (GDP). It is second largest industry in the country in terms of employment generation and world's second-largest producer of textiles and garments. The industry requires more sewing machine operators and quality controllers. About 30% of the readymade garments of the country are manufactured in Bangalore. Many of the sewing operator professionals have become entrepreneurs to enjoy their career and flexi lifestyle. There is tremendous potential for professionals in sewing operation and quality control, as the market is evergreen, growing and developing at a fast pace.

**Office Administration:** The manufacturing and service sector contribute to about 84% of the GDP, which grew at over 7% and is poised to be one of the largest economies of the world. This growth spurt demands multiple offices across the country. Needless to say, this entails for a steady supply of efficient and effective office administrators. B.Voc in Office administration is a set of daily activities that include secretarial services, personal assistance, co-ordination between various functional departments, front office administration, files and records maintenance, logistics, liaising with external agencies and coordinating commercial activities within an organization. Training in management, computer applications, expert use of the internet, and life skills will enhance the effectiveness of a good office administrator.

**Retail Marketing:** The size of the India Retail sector, spanning diverse categories across food and non-food, is estimated to be in excess of 400 billion USD and growing at a healthy pace of more than 15 % per annum. Regardless of size and structure, all retail organizations are required to engage in a gamut of retail operations and retail merchandising, retail operations, Retail Marketing and Sales, retail information technology and systems - all of which require well-trained retail professionals.

**Banking & Insurance:** The Indian banking sector's assets reached US\$ 1.8 trillion in FY15 from US\$ 1.3 trillion in FY10. Rising incomes are expected to enhance the need for banking services in rural areas and therefore drive the growth of the sector; programmes like MNREGA have helped in increasing rural income aided by the recent Jan Dhan Yojana. The Indian life insurance industry is estimated to grow at a compounded annual growth rate (CAGR) of 14.1 per cent, and reach US\$ 111.9 billion in 2015 from US\$ 66.5 billion in 2011, according to a report by BRIC data. This would make India the third-largest market for life insurance in the world by 2015. The vocational Programme will integrate theoretical, practical, and innovative aspects of Banking and Insurance operations. The Programme is designed to introduce fundamental concepts and simulate the operations of banking and Insurance.

**Accounting & Logistics:** To support the rapidly growing industrial sector, logistics as well as accounting professionals will be critical to enhance their productivity. India is expected to witness unprecedented growth in the logistics sector to provide end-to-end logistic solutions from manufacturers of goods to the consumer through organized retailers. As a concomitant role, regardless of size and scale all organizations are required to keep track of finances, budgets, transactions and maintain all statutory requirements of accounting records, all of which require accountants. The integration of technology to

both accounting and logistics will boost economic growth. Job opportunities exist in warehousing, cold storage, shipping and ports, freight forwarding and transportation, logistics solutions and supply chain management companies besides the manufacturing and retailing sectors. The B.Voc is expected to meet these requirements

**Photography & Visual Effects:** There is a wide world of photography. People enjoy photography and are thinking of it as a career, there are many different directions one can choose from. One can begin by creating a resume and portfolio of your work and can be done with proper qualifications for the job. Video editors use digital editing software to piece raw footage into a cohesive video story. Much of the editing direction is provided by the director or producer overseeing the project. Video editors also make sure that audio files match the speech appearing on screen. A video editor spends large amounts of time in front of several monitors in a closed office environment. The B.Voc provides the requisite training for various levels of photography and visual effects.

**Home Care & Nursing Assistance:** India faces an acute shortage of nursing staff with an estimated deficit of 2 million. In the public sector alone, an additional 140,000 staff nurses are required. Needless to say, this gets more acute when the patient is recovering at home. With most families, especially in the urban setting, being nuclear and both partners working, having a small child, or an elderly parent or a relative recuperating from an illness, either short term or long term calls for a care giver. While the opportunity for employment for home care is tremendous, an unexplored area is the potential for these graduates to work as nursing assistants to help tide over the paucity of quality nursing care, a need both in India as well as the rest of the world. Therefore, the B.Voc degree, addresses this niche area of training for home care and nursing assistance.

**Dental Hospital Assistance:** Dental assistants are an important part of the dental health care team and increase the efficiency of the entire dental health care delivery system. In addition, training on counseling is seen as an invaluable adjunct tool in the education system, across the community. The education could be in a clinic, a primary health center, secondary and tertiary care hospitals, and schools. Assistance in a laboratory is a skill that is valuable both in a lab as well as hospital. It saves both time and effort involved in using lab support for simple lab procedures. The B.Voc training imparted above happens in a multidisciplinary environment, delivered effectively through an internship programme.

### **Post Graduate Certificate in Professional Practice- Dentistry**

**Aesthetic Dentistry and Smile Design:** Keeping in line with the growing trend of personal aesthetics, dentistry too has fulfilled the need for a beautiful and healthy smile. As more and more people are focused on a beautiful smile, demand for dental services to enable this has also been set in motion. In response, the global dental devices market is slated to reach a whopping \$12.9 billion by 2016. Hence the need of the day is to train graduates and orient them to meet the esthetic trends of society.

**Oral Implantology:** Globally, edentulism compromises quality of life by reducing masticatory efficiency and thereby the nutrient value of food consumed. Treatment methodologies to treat edentulism have evolved over the years with near predictable results. A student of Oral implantology will be exposed to a wide variety of cases, due to, advanced training facilities including the Advanced Learning Centre and location and attachment to the 1400 bed hospitals. As rehabilitation of the missing tooth forms a major portion of private practice, effective training in current and advanced rehabilitative methods is essential.

**User Oriented Post Graduate Courses:** The University offers tailor made postgraduate courses in Engineering, Art & Design, Finance, Management and other Allied Areas to Industries and organizations interested in their employee development through education by the part time route. The duration of the course is 3 years and classes are conducted during weekends i.e. on Saturdays and Sundays or on days convenient to the users. The users can opt for regular courses that are offered by RUAS or can opt for customized courses. The methodology adopted for teaching and learning and credit to be earned for the award of the degree is same as that of full-time courses.

## Non-Credit Based Courses:

**1. Corporate Training Programme:** RUAS is well known for domain specific training program. The Corporate Training programs are customized to meet the needs of industry and academic institutions. We are very closely working with industry, research organization and also with academic institutions.

**2. Advanced Certificate Programme:** The courses under Advanced Certificate Program (ACP) are value addition courses with greater emphasis on student skill development on high-end industry standard software and hardware tools. This enables the student to upgrade their academic knowledge to practical industry-oriented applications.

Mechanical Courses:	Electronics Courses:
Finite Element Analysis (FEA)	VLSI System Design
Computational Fluid Dynamics (CFD)	Embedded System Design
Innovative Product Development	Communication System

**3. Modular Training Programme:** These courses are designed for the students / working professionals who would like to acquire skills in specific areas. Delegates can choose a single module or combination of modules at their convenient timing

Geometric modeling	Analysis	Manufacturing
CATIA	Hypermesh	CNC Milling
Unigraphics	Ansys	CNC Turning
ALIAS Studio	ICEM CFD	
	Fluent	

**4. Fellowship Programmes:** A collaborative modular training programme along with the International College of Oral Implantologists to train clinicians and graduates in preclinical and clinical implantology with exposure to advanced surgical procedures. Training will be conducted at the Advanced Learning Centre and clinical facilities of FDS, while assessment will be done by the ICOI.

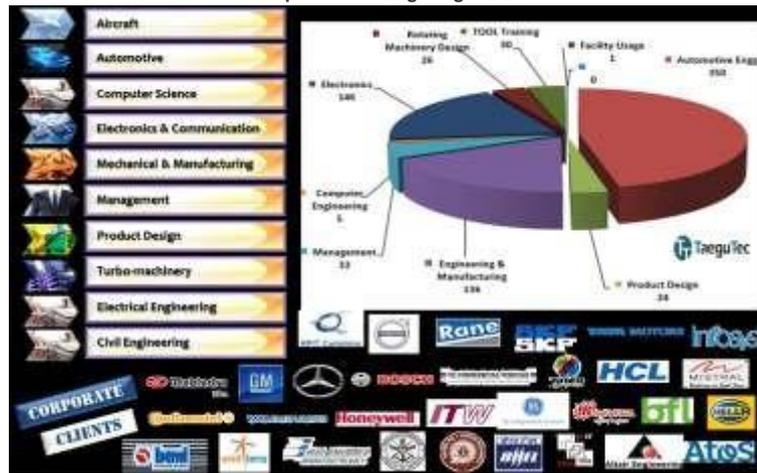
**5. Skill Training Programme:** Ramaiah University of Applied Sciences, started the Skill Development and Manufacturing Centre to offers vocational courses and also for assisting in prototype development. The courses offered are CNC Turning, Milling and Finishing

**6. Seminars / Workshops:** Seminar / Workshop are offered from all faculties often and are based on challenges and new advancements in the particular field. Sessions will be handled by experts from Industry, Research Organization, in house and external Academic experts. These programs provide a forum for domain experts to share their knowledge and experiences with practicing engineers from industry and faculty and students from academia.

**7. Proficiency Programme:** Proficiency Program is offered during weekends on Science, Engineering and Management topics for the benefit of working professionals & students. Training department shares the identified modules and contents in advance with Industry & Academia. Interested individuals from these organizations can register for these modules.

**8. Short Term Cookery Courses:** These are daylong to 5 day long courses offered to the interested in baking, salad making, low calorie cooking, bar tending and cocktail preparations, world cuisine and cooking for children.

### Corporate Training Programme



Only degree programme with more than 70% practicals to make you employable at each stage

## B.Voc.

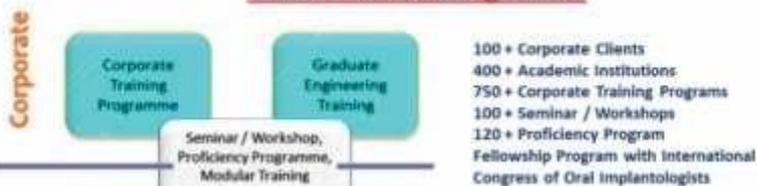
Bachelor of Vocational Degree  
3 Year Regular Degree Programme



#### Industry Collaborations



### Non Credit Based Programmes



- 100 + Corporate Clients
- 400 + Academic Institutions
- 750 + Corporate Training Programs
- 100 + Seminar / Workshops
- 120 + Proficiency Program
- Fellowship Program with International Congress of Oral Implantologists

**Trained more than 30000 delegates**



#### Our Clients:

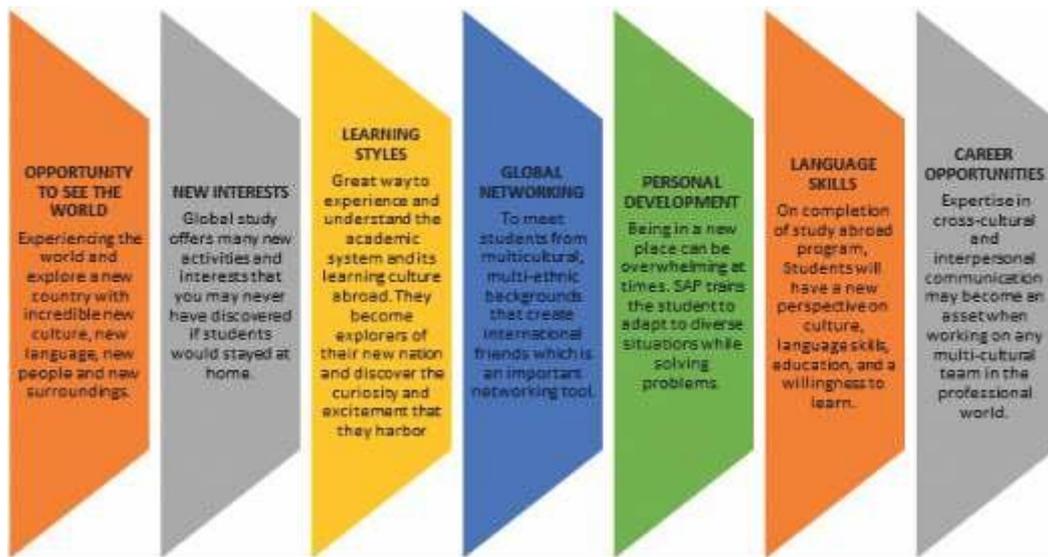


## 12. Directorate of International Collaboration, Partnership Management and Public Relations

### *Delivering Academic Proficiency through Study Abroad Program*

Studying Abroad is a sign of academic excellence in the field of education. It gives students the competence and combines various areas of interest. Study Abroad Program (SAP) assists the aspirants to internationalize themselves while earning academic credits. SAP allows the students to expand their horizon academically, culturally, and socially.

### Why Study Abroad



RUAS-SAP are designed to create a potential future and success in a wide range of career opportunities globally. RUAS assist the students for their Study Abroad Program through its Tie-ups with Universities across globe. With this, students can acquire profound knowledge through adoption of diversified learning styles and reap a competitive edge in the job market.

### **Directorate of International Collaborations, Partnership Management and Public Relations:**

- Facilitate International exposure to its student community through summer or Winter School and Internships and Advise on Higher Studies.
- Facilitate Faculty and Doctoral Program Scholars to work with International Academic Community on Research.
- Advise Indian students going abroad on International Scholarships for higher studies
- Develop Indian Students Associations of foreign Universities network
- Explore UG & PG courses on twining model options.
- Facilitate industry interactions of the faculty members and students from the university

### **When would you be able to study abroad?**

- For Undergraduate students during the end of the 6th semester (End of June for 4 weeks)
- For PG Students at the end of the first year (end of September for 4 weeks)

## International MoUs.



## International Collaborations

- Ghana Technology University College
- Airforce Institute of Technology, Nigeria
- Kazan National Research Technical University named after A. N. Tupolev – KAI, Russia
- Samara National Research University (Samara University), Russia
- St. Petersburg State University of Architecture and Civil Engineering, Russia
- St. Petersburg Stieglitz State Academy of Art and Design, Russia
- Moscow State University of Civil Engineering (National Research University), Russia
- Scientific Research Institute ASONIKA, Russia
- University of Illinois, Chicago, USA
- University of Bedfordshire, UK
- Peter the Great St. Petersburg Polytechnic University, Russia
- St. Petersburg State University of Industrial Technologies and Design, Russia
- Oklahoma State University, USA
- Indo-European Education Foundation (IEEF), Warsaw, Poland
- Institut Polytechnique des Sciences Avancées (IPSA), France
- University of Dayton, USA
- University Center of Anapolis, Anapolis, Brazil, The University Center of Anápolis – UniEVANGÉLICA
- Liberian Universities at Monrovia, Liberia
- Texas A&M University, Texas, USA
- Arizona State University (ASU), USA
- University of Applied Sciences Europe
- Wright State University, USA
- University of Texas at Arlington, USA
- Ural Federal University, Russia
- Viterbi School of Engineering, University of Southern California, USA
- University of Memphis, USA
- Massachusetts Institute of Technology (MITx): MicroMasters® Program Credential in Supply Chain Management (SCM)



### 13. Directorate of Transferrable Skills & Leadership Development

Directorate of Transferable Skills and Leadership Development (DTSLD) was created with the objective of integrating various functional units of RUAS into a matrix that espouses the value and the vision of the university. True to its name, DTSLD works towards imparting Transferable Skills and developing leaders among the mainstays of the University which are Students, Faculty Members and Staff.

#### Mission of DTSLD

DTSLD works towards:

- Helping students in developing skills which are transferable to the work environment
- Enhancement of the transactional, transformational and transcendental leadership skills in the university stakeholders to align with the University's Mission to serve the technical, scientific and economic needs of our society.

DTSLD strives towards *holistic development of students* through:

#### Curricular

- Communication Skills
- Language Skills
- Personality Development
- Social Sciences and Ethics
- Culture and Human Behavior
- Human Rights and Law

#### Extra-Curricular

- Debate
- Quiz
- Literary Club
- Mock Court

DTSLD works towards *Professional Development of Corporates and Individuals* through Training, Workshops, Mentoring and Coaching Sessions on:

- Brand Ambassadorship
- Shopfloor Leadership
- Negotiation
- Professionalism at Work
- Project Management
- Secretarial Practice

## **Key Initiatives**

- Shift in class-room teaching style, from being a teacher-centric to participant-centric style
- Workshops for enhanced effectiveness of internal stake-holders
- Training and development using 'Theater' as a tool
- Mentoring and Coaching students for prestigious competitions (Conventional Debate, British Parliamentary Debate, Model United Nations {MUN}, Theater, Essay Writing)

## **Innovations in Classroom Delivery**

- Priority is for experiential learning
- Imparting knowledge / skill is through activities
- A repertoire of activities is created for each intended learning outcome
- Activities consist of games, exercises, case studies, role plays, group work, group task, debates, quizzes and video clips
- A brief theory session to summarize and reinforce the experiential outcome

## **Innovations in Directorate Functioning**

Agile Approach:

- Agility in development and delivery
- Welcome changing requirements
- Work closely with the customer
- Customer delight
- Continuous focus on quality and excellence
- Self-directed and self-organized team
- Initiating activities around motivated individuals
- Rapid learning and continuous improvement
- Reflection at regular intervals

## **Look up to DTSLD For.....**

- Training programs / Workshops / Seminars / Guest Lectures to different stake holders of University
- Quiz and Debate clubs
- Theater Group
- Social Leadership Activities

## **Look up to DTSLD For.....**

- Training programs / Workshops / Seminars / Guest Lectures to different stake holders of University
- Quiz and Debate clubs
- Theater Group
- Social Leadership Activities



## Transferable Skills and Leadership Development

### Courses for UG/PG

Communication, Creative Writing, Sociology, Law, Human Rights, Foreign Languages, Society, Culture, Human Behaviour, Yoga and Spirituality, Theatre, Classical and

### Student and Staff Development Programmes

- Faculty Development Programme
- Training students on Corporate Skills
- Managerial and Leadership

### Student Clubs

☐ Student Clubs for Debate, Quiz, Drama, Music,

### Competitive Examinations

☐ Preparing Students for National Level Competitive

### Study India Programmes

## 14. Directorate of Quality, Education Processes and Educational Technologies (QEPET)

The Directorate of Quality, Education Processes and Education Technologies is mandated to implement and monitor academic quality control processes that include development and review of curriculum from Board of Studies; approval of curriculum by the Academic Council; review and approval of course/module notes; review and approval of term, assignment and examination question papers; monitoring of student attendance; collection and analysis of student feedback, staff feedback, feedback from technical and administrative staff; and training of members of faculty and members of staff on academic processes.

The courses/modules are delivered using various educational technologies, the directorate studies the various modern educational technologies that are essential to be implemented in the University to enhance the learning experience of the students and recommend for implementation.

The objectives of the Directorate are

1. Implement and monitor Academic Quality Control Processes among the faculties
2. Study progressive educational processes being practiced elsewhere and recommend effective teaching and learning practices for adoption by the University
3. Study the trend of educational technologies for effective teaching and learning and recommend the adoption of such technologies by the University

The Directorate of Quality, Educational Processes and Educational Technologies at RUAS is committed to closely monitor the quality of educational processes of the University and implement modern educational technologies to achieve international quality in curriculum development, delivery and assessment to produce globally competitive graduates.

Major activities of the QEPET:

1. Organize Review of Teaching Material, Assignments and Question Papers
2. Collect Student Feedback forms from Examination and Assessment section, Analyze Student Feedbacks and create consolidated report
3. Collect Faculty Feedback forms from Examination and Assessment section, Analyze Faculty Feedback and create consolidated report
4. The consolidated feedback forms of student feedback and faculty feedback is required to be submitted to the Dean of the respective Faculties to initiate corrective actions
5. Present the consolidated reports during Staff-Student Consultative Committee meetings, SAB, PAB and Academic Staff Performance Appraisal Committee meeting
6. Collect Student Exit Feedback forms from Examination and Assessment section, prepare consolidated report and present the same during the meetings of University Performance Review Committee and Academic Programme Planning and Review Committee
7. Chief-Quality Control (Academics) to act as the Chair of Programme Quality Assessment Committee
8. Report the findings of Programme Quality Assessment Committee to the University Performance Review Committee on annual basis



## 15. Teaching and Learning Resources

RUAS has created state-of-the-art teaching and learning resources for effective delivery and active learning by the students.











## 16. Software Available

### Mechanical, Automotive, Aeronautical and Civil Engineering

CATIA  
 UGNX  
 AUTODESK COMPLETE SUITE  
 TEAM CENTRE  
 ALTAIR HYPERWORKS  
 ANSYS  
 ABACUS FE-SAFE MSC  
 ADAMS  
 RICARDO WAVE AND VECTIS  
 LS-DYNA  
 MATLAB  
 AME SIM  
 DFMA  
 ERP NAVIGATOR  
 PREACTOR 10 SIMIO  
 SERVER CAPSMILL,  
 CAPSTRUN ARENA  
 SOLID CAST  
 CES  
 STADDPRO  
 On board diagnostics (OBD) Tester

### Electronic, Electrical and Computer Science

MATLAB  
 DS-5  
 KEIL  
 ADVANCED SYSTEM DESIGN 2011.1  
 EM PRO  
 SYSTEM VIEW  
 XILINX ISE VIVADO  
 EMPIRE 3D  
 CADENCE  
 RVDS  
 DE-2 QUARTUS MP LAB IDE  
 NI MULTISIM

NI LABVIEW  
 ANSYS Maxwell  
 ANSYS SImplorer

### Art and Design

Autodesk Sketchbook Pro 2014  
 Autodesk Sketchbook Designer 2014  
 Autodesk AutoCAD2014 Autodesk Alias  
 Automotive 2014 Autodesk Maya 2014  
 Autodesk 3DS Max 2014 Autodesk  
 Showcase Professional 2014 Autodesk  
 Mould flow Insight Advanced 2014 Autodesk  
 360  
 Corel Draw Suite V18  
 Corel Painter  
 Pinnacle Studio 19

### Management and Commerce

Microsoft Project 2013 ERP  
 Navigator

SPSS  
 Tally 99

### Science and Humanities

MATLAB  
**Dental Sciences** Dolphin  
 Imaging Premium VISTA  
 SCAN & PRACTO CBCT

3-MATIC

### Pharmacy

Turbo C  
 IR Solutions software Euro Chrome software  
 PCP Disso v2 – Drug release  
 Kinetic studies software  
 Graph Pad Prism – ver. 4.0 software  
 CAMAG – HPTLC SYSTEM – SWITZERLAND (Thin  
 layer Chromatography – WINCAT'S software)

MICRO IMAGE LITE – OLUMPUS  
BIOVIS – Image Capture Software (Particle size analyzer - Professional software to control complicated experiments, quantify the data, and visualize the results)  
NIVIQUE DAS SYSTEM (ECG, BP, TISSUE CONTRACTION – INCREASED USE OF DRUG)  
ExPharma – Animal Simulation Software  
MICROMEDEX – DRUG INFORMATION SOFTWARE (Micromedex Solutions provide a single source of clinical information — from need-to-know drug, pediatric, disease, lab, and toxicology)  
TOPCAT - Drug Design - Auxiliary software

**Hospitality Management and Catering Technology** Fortune NEXT 6i  
Professional Orell language Software

### General Software

eScan Antivirus  
Microsoft Office 2013 (full package)  
LibSoft Ver. 9.0.0  
Front Page

University Management System (Custom Built)  
Tally 9 multi user accounting package Saral Pay Pack Advanced Multi User Acc Pac (Accounts Software), Bar Coding Software

### PACE-Grant

Autodesk Sketchbook Pro 2014  
Autodesk Sketchbook Designer 2014  
Autodesk AutoCAD 2014  
Autodesk Alias Automotive 2014  
Autodesk Maya 2014  
Autodesk 3DS Max 2014 Autodesk Showcase Professional 2014 Autodesk Moldflow Insight Advanced 2014  
Autodesk 360  
LSTC LS Dyna  
Ansys Mentor Graphics Altair-Hyperwork



## 17. Staff Resources

RUAS has classified its staff members into:

1. Officers of the University
2. Members of Faculty – Teaching and Research Staff
3. Project Staff – Working on Research & Consultancy projects
4. Training Staff- Staff involved in training work
5. Technical Support Staff- Staff working in the laboratories/workshops/studios/clinics/ICT/Library/Garden
6. Administrative Staff- Involved in Administrative work
7. Office Support Staff (Office Assistants and Drivers)
8. Security and Housekeeping

The Teaching and Research faculty members have qualification as per UGC norms, experienced, technology savvy and student loving. Many of these members of faculty act as Proctors at Undergraduate level, Project supervisors and Research supervisors at Postgraduate and Ph.D. levels and take responsibility for shaping up the careers of the students. RUAS maintains a staff student ratio of 1:15 at Undergraduate level and 1:9 at the Postgraduate level. The professors publish research articles in reputed journals, present research findings in reputed conferences and symposia and periodically attend staff development programs to keep themselves updated and undertake sponsored research, consultancy and training work with reputed industries and business organizations to keep themselves relevant to the present day requirements of society.



Staff interacting with the Members from PACE (Partners for the Advancement of Collaborative Engineering Education)



Staff Interacting with members of University of Pardubice, Czech Republic



Staff representing student work to the members of University of AVEIRO



Staff interacting with Russian Delegates from Kazan National Research Technical University (KNRTU-KAI)



Staff Interacting with Rector and Members – Ghent University, Belgium



Staff interacting with Russian Delegates from St. Petersburg State University of Architecture and Civil Engineering, Russia



Staff interacting with France Delegates from Ecole des Ponts ParisTech



Members of Faculty involved in Subject Assessment Board Meeting



Staff Participating in Training of Board of Studies Members



Members of Faculty participating in Staff Development Programme

## 18. Student Life at RUAS

### Accommodation

The University has created Hostels on its campuses. More than 20% of its students are accommodated in the campus hostels. The students can opt for twin bed or single bed accommodations. Since there are limited numbers of accommodations outstation students like to stay in the campus hostels are required to contact student welfare office for accommodation at the time of initiating their admissions. However, those students do not get campus accommodation will be facilitated by the student welfare office to get accommodation in the surrounding areas of the campus.



### Mess and Cafeteria

Students who would like to avail mess facilities available in the hostels. The mess serves both vegetarian and non-vegetarian food in the south Indian style. However, there are number of cafeteria on the campuses and in the surrounding area which serve food, snacks and beverages to everyone's taste.



## Leisure

Novels, Story books, Magazines, News Papers are available in the student reading rooms. Internet, Music System and TV facilities are available in the student lounges. Interested students can spend their leisure times in various hobby clubs and dance and music halls.

## Sports and Games



Students have the facility to practice yoga and gymnasium on the campus. University has created facilities for both indoor and outdoor games. Annually, the University holds sports and cultural competitions.



## Competitions and Exhibitions



Students are encouraged to take part in various technical competitions at the University and Inter University levels.

## Internships and Placements

The placement office of the student affairs directorate is committed to assist the students to get internships during the course and placements after the completion of the course.



## Excursions



The student affairs directorate conducts tours and excursions periodically. Students interested can take part in trekking, excursions and tours.

## Health Care

Students can avail health care facility with M.S. Ramaiah Teaching Hospital. Every student taking admission with the University is required to be a member of health care scheme of the University created for the purpose of student health care.



## Social Service and Social Responsiveness Programme

Every student of the University is required to spend 3 full days every year on social service programmes organised by the University.



### **What our Alumni and Visitors Say?**

It was a great experience to pursue the course at MSRSAS. The course content as well as the different approach of evaluation made the course challenging. Unlike traditional method of examinations which are only theory based and does not really test the practical knowledge, the assignments for the modules were really challenging and really test the understanding of the concepts.

The entire course has laid in me a strong foundation of concepts in various areas of computers and has stimulated my way of approaching a problem and finding the solution to it. The course has also enhanced my discipline and conviction to learn after a long 7-year gap. I am very satisfied with the entire course and I thank MSRSAS and Coventry for giving me this opportunity to learn and strengthen my knowledge.

#### **Anupama Anand (CSN PT2010)**

My Master's program from MSRSAS has broadened my knowledge and opened the horizon in engineering and management to guide and lead an organization with confidence and zeal. I have attached my contribution to Volvo Buses India from my learning's taken from MS Ramaiah School of Advanced Studies. The uniqueness about my project which I have taken has given a reduction of 54% in process time reduction which is unique by any industrial standard in manufacturing. In other words, productivity improvement can go up to a maximum of 100% since the production can be doubled. Generally productivity improvements are between 10% and 15%.

#### **Cyril G. Xavier (EMM PT 2010), Chief Operating Officer, Spheros Motherson Thermal Systems Limited, Noida, India**

To complete a three year degree, while working full time is no easy feat. There will be deadlines, to meet at work, and after a very taxing working week, studying during the weekend, is a tough choice. However, while I started my Masters in Computer Science and Networking at MSRSAS, I found the topics interesting.

#### **Working on the assignments and the final year project, was intellectually challenging, and it changed my outlook towards studying.**

The facilities provided by MSRSAS were always top notch. Studying and attending lectures were a pleasure due to the ambience in the study rooms. The course structure, contents and subjects which are part of Computer Science and Networking were well etched to my needs and my current working experience. Attending this course has immensely helped me better my day to day work.

Labs and testing are the make or break part of any curriculum. The supportive lab faculties and state of the art labs made studying more pleasurable, as there is no better way to learn than to get hands-on experience. For a part time student like me, MSRSAS was a great opportunity to complete my dream of getting a Master's Degree. Thank You MSRSAS!

#### **Mumshad Muhammed (CSN PT10), EMC2**

Very good initiative by MSRSAS and a good form of industry & academic interaction. Event was really good. Would like to attend such events or sessions in near future. Seminar organized in professional manner.

**Participant, attending "Unsteady Phenomena in Turbomachinery and Combustion System"** We are very happy with the course content covered and detailed explanation provided. Thank you.

**Project Engineer, MAN Diesel and Turbo India Ltd. attending "IC Engines"**

**Excellent!!**

"A truly well-planned facility that will help Surgeons train in a proper scientific manner!!  
Congrats & Best Wishes to Dr. Sundaresh and his dedicated team"

**Dr. Anant Joshi, Renowned Arthroscopic Surgeon, Mumbai, India**

**A Fantastic Experience!!!**

Tribute to the vision of the man who thought of this facility

**Padmashree Dr. Yash Gulati, Director & HOD in orthopedics, Joint Reconstruction & Spine Surgery BLK Super Specialty Hospital, New Delhi**

"I had a great time at MSRCHM. I still love keeping in touch with the College. A few years back Facility Management Career was quite unconventional, yet today I find many hotel management graduates having a lucrative career in this field. As Vice President of my company, I owe a great deal of my success to my alma mater and have provided employment to many from my college. "

**MANJIT SINGH, (BATCH: 1996-99), VICE PRESIDENT, JONES LANG LASALLE MEGHRAJ**

A visit full of imaginative training and educational methods for practical engineers. I am impressed with the range and depth of studies undertaken. The model used for training must have greater applicability throughout engineering training.

**Prof. William Wakeham, Vice Chancellor, University of Southampton, UK**

To solve the world's environmental and development problems, we need innovators and designers that your institution is training. Keep up the good work.

**Dr. Kanedh Yumkella, Director General, UNIDO, Vienna**

In a short span, an excellent institution for training and R & D in several technology areas has been started. It has excellent potential for further growth.

**Dr. R. Chidambaram, Principal Scientific Advisor to Govt. of India**

## **Admission to the University**

### **Selection of Programme and Course**

Students are advised to choose the programme and the course after carefully reading this prospectus and making enquires with the concerned faculties.

### **Eligibility Criteria**

The eligibility criterion for each of the programme is given in programme regulations available on the University website.

### **Selection of students**

Students are selected based on admission policy specified by the University.

### **Course Fees**

The course fee to be paid will be notified on the University website at the time of calling for admission.

### **Admission Period**

Students can contact Director Admissions from the month of January of the year. The admissions will be closed by the end of July every year.

### **Academic Year**

The academic year starts from the second week of August every year.

### **Admission to Foreign Students**

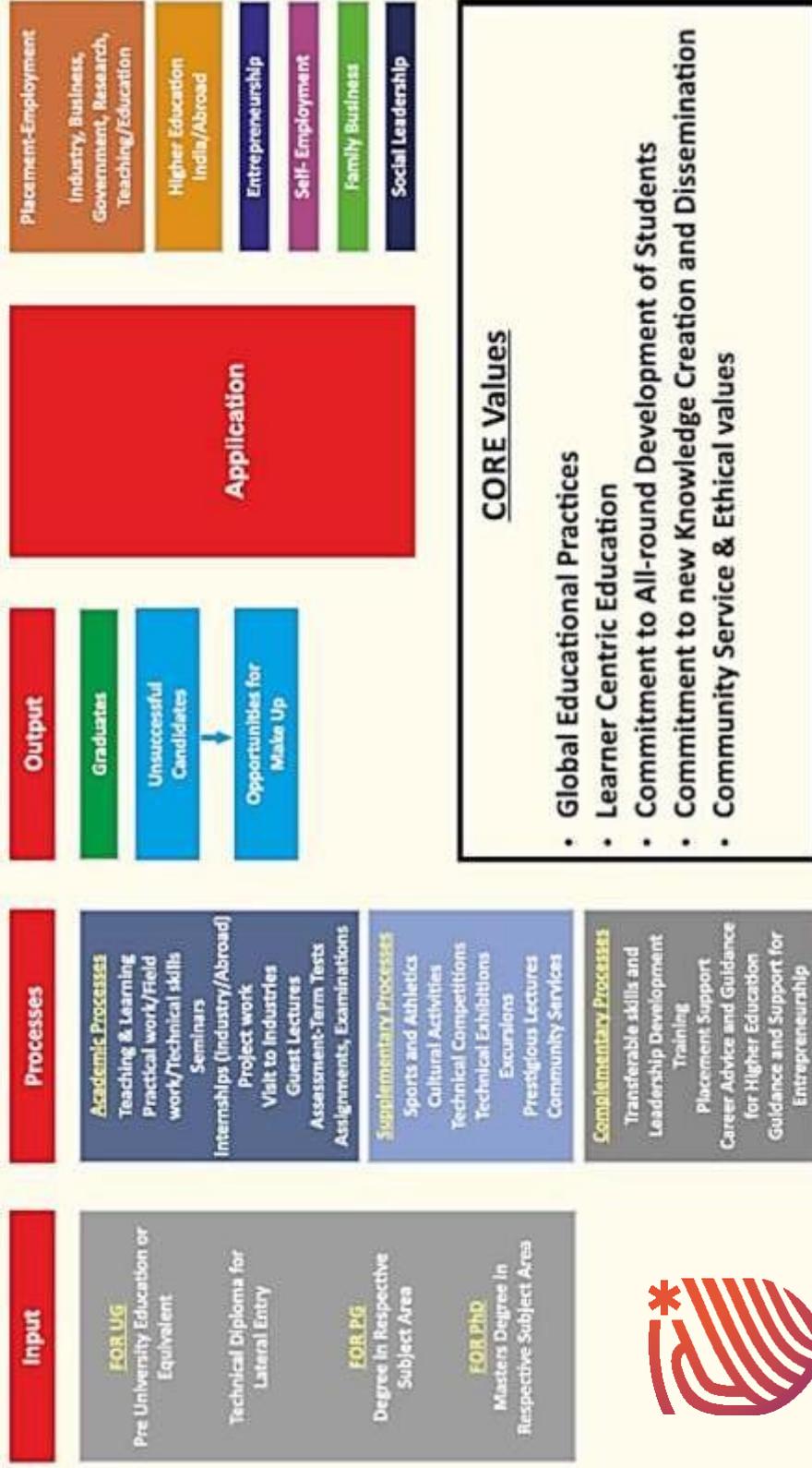
Foreign students are required to have the minimum qualification as specified by the Faculty and should have proof of having proficiency in English language. The foreign students are required to pay the fee in USD.

For Admissions please contact:

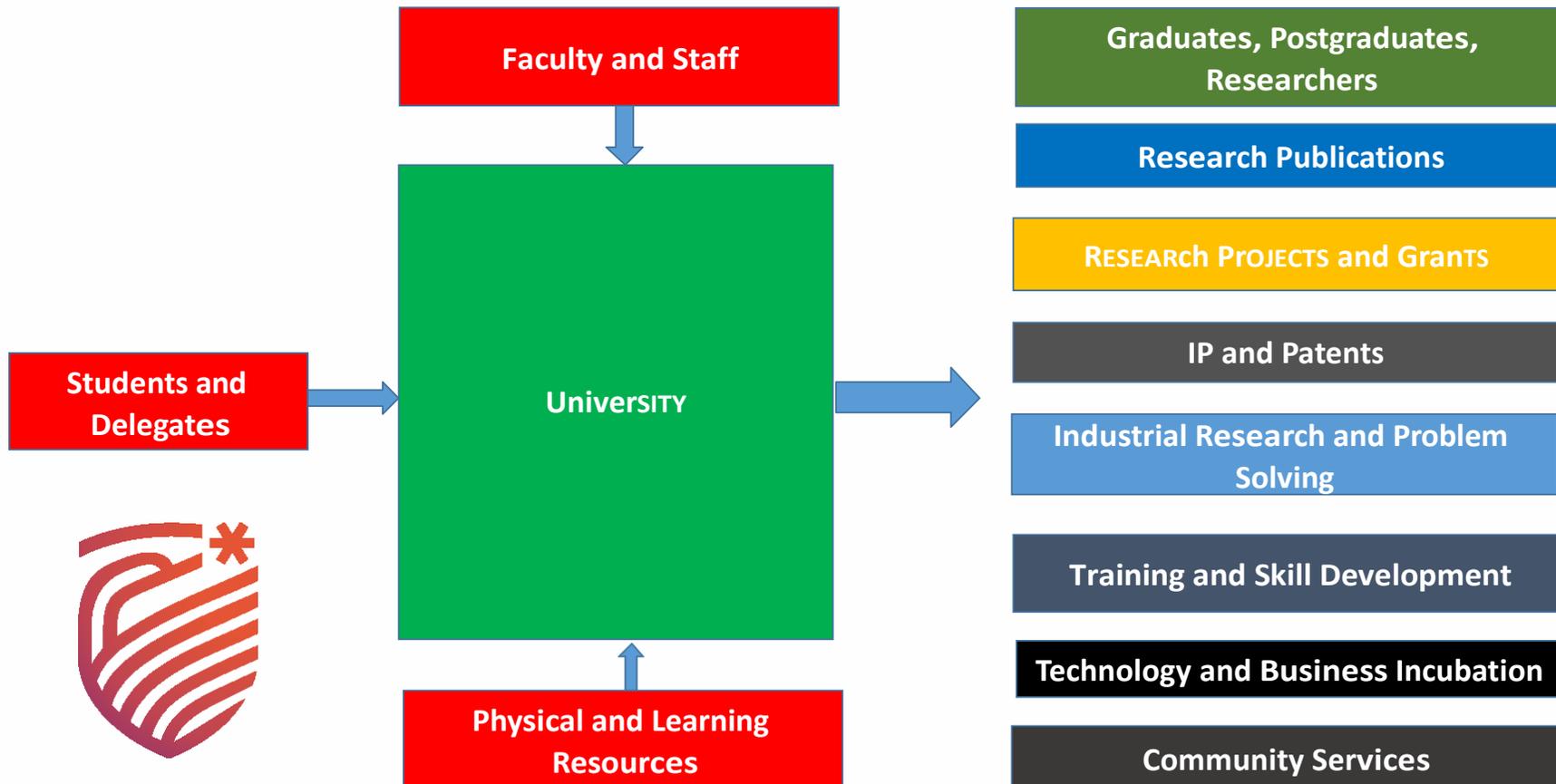
### **Director Admissions**

University House, Gnanagangothri Campus, New BEL  
Road, M S R Nagar, Bangalore-560 054. Karnataka, INDIA.  
Ph: 91-80-4536 6666 | Fax: 91-80-4536 6677  
E-mail: [director.admissions@msruas.ac.in](mailto:director.admissions@msruas.ac.in) / Website: [www.msruas.ac.in](http://www.msruas.ac.in)

## EDUCATION PROCESS AT MSRUAS



## Envisaged Outcomes of the University





[www.msruas.ac.in](http://www.msruas.ac.in)

**Ramaiah University of Applied Sciences**

University House, Gnanagangothri Campus,  
New BEL Road, MSR Nagar, Bengaluru - 560054.  
KARNATAKA, INDIA

Tel: +91 80 4536 6666

Fax: +91 80 4536 6677