



R.V. COLLEGE OF ENGINEERING

(Autonomous Institution Affiliated to VTU, BELAGAVI)

R.V. Vidyaniketan Post, Mysore Road,
Bengaluru - 560 059



HAND BOOK OF GENERAL INFORMATION

Academic Rules, Regulations and Guidelines for Students of

Post Graduate Programme

MASTER OF COMPUTER APPLICATIONS (MCA)

2018 SCHEME

(WITH EFFECT FROM 2018 - 2019)

VISION

Leadership in Technical Education, Interdisciplinary Research & Innovation, with a Focus on Sustainable and Inclusive Technologies

MISSION

- To deliver **Outcome Based Quality Education**, emphasizing on experiential learning with state of the art infrastructure
- To create a conducive environment for interdisciplinary research and innovation
- To develop professionals through **holistic education** focusing on individual growth, discipline, integrity, ethics and social sensitivity
- To nurture industry-institution collaboration leading to competency enhancement and entrepreneurship
- To focus on technologies those are **sustainable and inclusive**, benefiting all sections of the society

Glossary of Abbreviations	
Academic Autonomy	Freedom given to a College in all aspects of conducting its academic programme, granted by the University for promoting excellence (within the guide lines of VTU)
AC	Academic Council
Autonomous College	College designated as an autonomous college by the university, as per the VTU Autonomous College Statute- 2006.
BoE	Board of Examiners
BoS	Board of Studies
CIE	Continuous Internal Evaluation
CGPA	Cumulative Grade Point Average
GAC	Grading Advisory Committee
Lateral Entry	Students who have joined the Master of Computer Applications programme in the second year of the Three year MCA programme
MHRD	Ministry of Human Resources Development
NSAR	Not Satisfied Attendance Requirement
NSSR	Not Satisfied Sessional Requirement (did not get the Minimum CIE requirement to appear for SEE)
OBE	Outcome Based Education
PG	Postgraduate Programme
RSST	Rashtreeya Sikshana Samithi Trust
RVCE	Rashtreeya Vidhyalaya College of Engineering
Regular MCA	Students who have joined the programme in the first year of the Three-year Master of Computer Applications programme
SEE	Semester End Examination
SGPA	Semester Grade Point Average
University	Visvesvaraya Technological University(VTU)

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CONTENTS

Section No.	Sub Section	Title	Page No.
1.0		PROFILE OF THE INSTITUTION	06
	1.1	Rashtreeya Sikshana Samithi Trust	06
	1.2	Rashtreeya Vidhyalaya College of Engineering	06
	1.3	Academic Programmes Offered	15
	1.4	Profile of the MCA Department	
2.0		ADMISSION PROCESS	17
	2.1	Eligibility Rules for MCA programme (Regular)	17
	2.2	Eligibility Rules for MCA programme (Lateral Entry)	17
	2.3	Admission Procedure for MCA Programme (Regular)	18
	2.4	Programme Duration for MCA	18
3.0		ACADEMIC PLANNING	19
	3.1	Academic Planning for MCA	19
	3.2	Semester Registration/Dropping/Withdrawal	24
	3.3	Attendance Requirement	24
	3.4	Semester Scheme	25
	3.5	Credit System	26
	3.6	Credit Structure	27
	3.7	Credits requirement for MCA Programme	27
4.0		EVALUATION SYSTEM	28
	4.1	Achievement Testing	28
	4.2	Grading System	30
	4.3	Passing Standards	31
	4.4	Schedule of Examinations	32
	4.5	Vertical Progression	35
	4.6	Revaluation / Photocopy	35
	4.7	Malpractice	36
	4.8	Rejection of Results	36
	4.9	Grade Cards	36
	4.10	Percentage equivalence of Grade Point	36
	4.12	Graduation Ceremony	37
5.0		VALUE ADDED COURSES & SERVICES	38
	5.1	Finishing School	38

	5.2	Professional Societies	38
	5.3	Scholarship facility	38
	5.4	Library and Information Centre	39
	5.5	Placement and Training	40
	5.6	Transportation Facilities	41
	5.7	Hostel Facilities	43
6.0		EXTRA CURRICULAR ACTIVITIES	43
	6.1	Cultural Activities Team (CAT)	44
	6.2	National Service Scheme (NSS)	44
	6.3	N.C.C.	44
	6.4	Sports Facilities	44
	6.5	Departmental Associations	44
	6.6	RAAG	44
	6.7	Rotaract Club	44
	6.8	Innovative Project Groups	45
	6.9	Other clubs including QUIZCORP, DEBSOC to promote quizzing and debating activities	45
	6.10	Women Empowerment and Skill Training (WEST)	
	6.11	Skill and Personality Development Programme	
7.0		DISCIPLINE TO BE FOLLOWED	45
	7.1	General Discipline	45
	7.2	Anti-Ragging Rules	45
	7.3	Dress Code issues	46
	7.4	Mobile Phone issues	46
	7.5	Security Issues	46
	7.6	Support Services	47

1.0. PROFILE OF THE INSTITUTION:

1.1 RASHTREEYA SIKSHANA SAMITHI TRUST (RSST)

The last decade of pre-independence India was marked with several initiatives and entrepreneurial ventures. One such unique venture was the founding of Rashtreeya Sikshana Samithi Trust (RSST), by Sri. M.C. Sivananda Sarma, a freedom fighter and a scholar in the year 1940. The organization started with a noble mission to impart quality education to all sections of the society, without any favour or bias towards any one. Today, the charitable trust provides a venue for quality education, catering to a wide sector of educational needs, starting from kindergarten to post graduate education as well as research in advanced engineering, medical and architecture domains. The sustained growth and success is due to the dedicated efforts of the management and their continued commitment to the founder's vision, mission, quality, continuous improvement and concern towards social responsibility. Today, the trust is managed by a very distinguished board of trustees led by **Dr. M.K. Panduranga Setty, President, Chairman Governing Body, Sri. C.V. Hayagriv and Shri Panditharadhya, Vice Presidents, Shri K.G. Subbarama Setty, Hon. Treasurer, Shri A.V.S. Murthy, Hon. Secretary and Shri D.P. Nagaraj, Hon. Joint Secretary.**

The board of trustees recognizes the importance of holistic education and the need for a learning environment that nurtures healthy competition and innovation. Rashtreeya Sikshana Samithi Trust **manages over twenty educational institutions including schools, colleges offering degree and post graduate programme in different specialties.** RSST continuously strives to create state of art infrastructure, recruit excellent faculty and facilitate efficient administration in all its institutions to provide congenial ambience for learning. Today RSST is regarded as one of the finest and the best managements for education in the country.

1.2 RASHTREEYA VIDHYALAYA COLLEGE OF ENGINEERING

Marching towards Excellence in Education, Research and Innovation

Rashtreeya Vidyalaya College of Engineering (RVCE) established in 1963 is one of the earliest self-financing Engineering colleges in the country. **R.V. College of Engineering** is the flagship institution of RSST. RVCE provides opportunities to all sections, including the under privileged, differently abled and socially marginalized people to gain engineering skills through various programmes like WEST-Women Empowerment and Skill Training etc.

RVCE is rated amongst the top five self-financing engineering colleges in the country and some magazines have rated it as the best institute in the country among private institutions, including in terms of the **Best Return on Investment for a student.** RVCE is a preferred destination for top ranking aspirants, both for UG and PG programmes. RVCE is an **Autonomous college**, affiliated to **Visvesvaraya Technological University (VTU), Belagavi.** It is governed by its own Academic Council which is empowered to approve academic curriculum as suggested by Board of Studies of various programmes and as per the **VTU guidelines for autonomous institutions.** RVCE currently **offers 12 Bachelor, 19 Master degree programmes** with provision for Ph.D studies in all the departments and carries out Research and Consultancy activities. All UG programmes have been accredited multiple times. Some of the PG programmes have been accredited and other eligible PG programmes have gone for accreditation. The College currently has student **strength** of about **5600, faculty strength of more than 400, Technical & Administrative Staff of 241** and about 230 Research Scholars are pursuing Ph.D.

The institution has set itself a Vision ***“Leadership in Quality Technical Education, Interdisciplinary Research & Innovation, with a Focus on Sustainable and Inclusive Technology”***.

All the projects are in line with the vision of sustainable and inclusive technology development, with a focus to contribute to both technological leadership of the nation and at the same time contributing to the development and welfare of all sections of the society. RVCE is rapidly expanding its R&D activity and Industry academic collaboration.

1.2.1 Academics & Autonomy

RVCE was granted Autonomous Status by the VTU, UGC and Government of Karnataka in the year 2007, for its undergraduate programme and in the year 2016 for postgraduate programme. Being an Autonomous college affiliated to VTU, RVCE prescribes its own syllabi and academic activities. A special emphasis is on **experiential learning** and **Outcome Based Education (OBE)**. The academic activities concentrate on helping the students to gain an excellent theoretical knowledge base and development of skills to implement them. The latest teaching aids from multimedia equipment to simulation techniques ensure a thorough learning process. The institution regularly invites experts and industry professionals to impart practical skills and lessons to students. Industrial visits are encouraged to help the students to grasp the technology at work. Students are motivated to take advantage of opportunities provided and build a bright future.

Outcome Based Education (OBE)

- UG programme are for 175 Credits, out of which, 50 credits are for Experiential Learning and Project Based Learning
- MCA programme is defined for 132 credits for Regular students and 88 credits for Lateral students
- Regular advanced Pedagogical Training for faculty to enhance Teaching-Learning Process
- Students are involved in use of ICT tools including e-learning material, QEEE, MOODLE, NPTEL, MOOCS, as a part of Experiential Learning
- Flipped Class Room and other ICT initiatives in Teaching & Learning
- Initiation of research culture for first year students through Journals reference for self-study & assignment
- Use of Online Assessment, Software Assisted Learning, EDUSAT Programme and Language Lab
- Designing and recording of Course Material in Digital Media Centre
- RVCE’s unique initiative includes providing all students with a platform to engage in research and innovation. This has led to development of India’s first PICO satellite, Formula style combustion, hybrid and electric Racing Cars, Unmanned Aviation Vehicles (UAV’s, Radio-controlled and Autonomous) and Robotics. The students have consistently won awards not just in India but all parts of the world. The Formula Hybrid team of RVCE has won 2nd position in the worldwide Formula Hybrid competition conducted by SAE & IEEE held in New Hampshire, USA consistently during the last two years in 2017 & 2018. The All-Terrain Vehicle team has won 2nd position in the acceleration event in addition to overall commendable performance at the International Baja competition conducted by SAE held in USA in 2016. Recently the students have initiated a new project ‘Antariksh’ which plans to build a nano satellite and launch it with bio payload (first time in the history of Indian space mission) with support of ISRO in 2019. Team Krushi have developed automated aerial platform which works with hydraulic power of tractor and is also participating in this year’s ASABE competition held in USA

- Believes in overall development of students. The institution encourages the students' participation in co-curricular and extra-curricular activities viz. Cultural, Sports, NCC, NSS, ROTRACT and other social clubs

RVCE has leveraged its 10 years of autonomy to make education learner centric. Some of the facilities within the campus also provide an opportunity for the students to get oriented to the practical aspects of engineering. The whole campus is well and seamlessly connected with over 30 Kms of wired connectivity and close to 200 wireless access points located strategically all across the campus, with a further scope for scalability. Every student is given an official e-mail ID once he/she is admitted to the institution.

RVCE also has excellent laboratories including 35 labs set up by industry. Some of the companies who have set up labs include **IBM, EMC², Samsung, ABB, PACE Electronics, Freescale Semiconductor, CISCO, NXP, Texas Instruments, Wipro, Infosys, Bosch Rexroth, MindTree, Lapp Cable, Cognizant, Bosch, Keysight (Agilent), Sparx, TE Connectivity and Tejas Networks.** Further, students have access to an extensive library with both printed and electronic version of books (>1 Lakh Volumes) and journals (> 4000 journals) and also a Digital Learning Center for developing e-learning material to facilitate the students and faculty. After successful completion of the programme, more than 96% of the eligible students are placed through campus selection, or selected for higher education in the best of institutions across the globe and some even take up entrepreneurship.

1.2.2 Achievements & Research Initiatives

A. Research Initiatives

RVCE was one of the first colleges to have its entire Bachelor programme accredited by National Board of Accreditation (NBA), as per the guidelines of the All India Council for Technical Education (AICTE), New Delhi, India. MHRD chose RVCE for the review / assessment of India's new NBA process by International Observers, to enable India to enter the Washington Accord. RVCE utilizes its expertise in various disciplines to take up Research and Development for Industry and Defense Establishments in the country. Innovative projects are supported by the Management. RVCE has a collaborative arrangement with leading universities in Germany for Post-Graduate and Research programme. There are more than 200 scholars pursuing Ph.D. under the various Research Centers. 32 patents are either granted or filed by RVCE and plans are on to file over 50 patents by the end of 2018-19. In line with the roadmap, to set up an Innovation and Incubation Center in the Golden jubilee year (2013-14), the first such facility has been initiated with TE Connectivity. RV Incubation Center has been started to promote Innovation, Activation, Fostering Startups and Entrepreneurship Development. This is intended to support entrepreneurs to develop businesses, accelerate growth and success of start-ups during initial stages This also provides shared co-working spaces, conducive environment for Innovation activation. Also technical mentoring for product development is provided with Lab / Fab facilities. This enables establishing Networking and linkages, for product launching marketing, branding and for venture capital. Also assistance is provided to organize seed funding and statutory / legal assistance for company registration / taxation, and assistance for IPR. Any RV College under graduate (7th Sem and above) or Post graduate students (3rd Sem and above), are given preference. RV Alumni or any other technical graduate from other colleges who have good innovative Idea are also eligible.

RVCE's unique initiative include providing research, innovation and even environment for startup platforms for the graduate or bachelor students, as an integrated process in their curriculum. This has led to development of systems including India's first **PICO satellite, Hybrid automobiles, Unmanned Aviation Vehicles (UAV), Tele presence Robot and Racing Cars**. The students have consistently won awards not just in India, but in all parts of the world for their design and innovation. **The race car team has won the best Asian Team award at Italy consecutively for the last two years. The Autonomous Air Vehicle won a special mention by US Navy and best systems engineering award from NASA in USA. RVCE students have won awards for development/demonstration of innovative ideas from multiple agencies including ISA, Volvo, Motorola, Intel, Analog devices, Texas Instruments, IBM and KSCST. RVCE has leveraged its autonomy and in the last 8 years to make the education more learner centric and experiential. Students are encouraged to attend conferences and workshops to present their work.**

RVCE was also awarded the **“Best Innovative Spirit Award”** at CII Innovation Conference in March 2012 for facilitating its students to participate in multiple technological contests. Strong Entrepreneurship development cell motivates the students to take up self-employment ventures. Already close to 10% of the alumni are entrepreneurs. Last year, a startup company by two of our outgoing students Mr. Srikanth Talwar and Ravikiran, competing with Multinationals, got selected to develop the online admission process for the Diploma Programme, facilitated by KEA, Government of Karnataka. Mr. Arun Murthy, one of our alumni and one of the founders of “Horton works” which became the fastest ever venture to touch 100 million revenue in just 4 years. There are more than 1000 alumni who have their own ventures in India and abroad.

Interdisciplinary Research & Innovation:

- More than Rs. 25 crores worth sponsored research projects executed in last 5 years and Rs. 15 crores worth projects in process.
- Executed more than Rs. 2.5 crores worth of consultancy work in the last three years.
- Journal Publications: H-index range varies from 1-5 and average citation index is 25.
- Total Citations (last 3 years): Scopus Index– 1774, Google Scholars-6583, Web of Sciences-1034.
- Filed 32 Patents (last 3 years). 24 Patents have been published in the Gazette of the Indian Patent Office.
- Non Destructive Testing lab. from VGST, GoK.
- High Performance Computing lab from DST, in CSE Dept.
- Centre of Excellence in Macroelectronics (MHRD-TEQIP II)
- CISCO-RVCE Centre of Excellence in Internet of Things (IoT)
- State-of-the-Art Interdisciplinary Research Centre with sophisticated instruments / equipment.

B. Achievements & Recognitions

- **Ranked 58th** in the country - **NIRF-MHRD** during 2017-18.
- Team HELIOS stood 5th Place in overall ranking, 2nd Place in costing, 4th Place in Business Plan (among 75 participating teams) in the ATV Championship ESI Enduro held at Coimbatore during (4-7)th Jan. 2018.
- Team Fuzzy AI won 1st Runner Up in the AICTE- Smart India Hackathon 2018- Software edition (Part 2) & Hardware edition (Part 2) competitions during April & June 2018.
- Engineering College of the Year-2017 award by the Higher Education Review Magazine.

- Ranked 7th among top 113 Pvt. Engg. Colleges by The Week Magazine.
- Ranked 8th among the top 10 of 100 Pvt. Engg. Colleges in the Country by Education World Magazine.
- Campus Partner: QEEE – IIT-Madras, Chennai and offered 49 online courses and visual lab. in the last three years.
- Well Performing Institute by MHRD-TEQIP (Phase – II) and graded ‘A’ at National level.
- High rank students prefer to join the institution through entrance exams including CET, COMEDK, GATE, PG CET.
- Best NCC Institute for Karnataka & Goa, Directorate – 2017-18.
- Rated ‘AA’ grade by NPTEL based on performance in NPTEL Online Certification courses.
- Team Ashwa Racing won 2nd Place in the 2017 Formula Hybrid Competition (in the overall category) at New Hampshire Motor Speedway in Loudon, USA during April 2017.
- Over 25 Alumni of RVCE have cleared Civil Services examinations since last 3 years.
- Ranked 2nd in Sports & Cultural Activities under VTU.
- Mr. Avinash M and Mr. Aravind M have been selected in the Indian Team to participate in the 18th Asian Games-2018 (Swimming Competition) to be held at Jakarta (Indonesia) from 18th August. to 2nd September. 2018.

C. Some Other Unique Research and other Initiatives

- a. Developing indigenous technology for growth of Nanomaterials, SoC and characterization equipment.
- b. Establishing a 100 KW biomass based power plant and working on a wide range of biomass as fuel.
- c. A 14 KW Solar electrical grid tied power generator facility.
- d. Developing a novel technology for converting waste coal and lignite to clean fuel like methane and alcohol.
- e. Developing a novel amorphous silicon solar cell based Plasmonic cells.
- f. Developing high temperature (~400 to 500°C) solar thermal receiver tubes.
- g. Developing environment friendly concrete using waste from different sources for civil construction which also uses lesser water and dries faster.
- h. Infrastructure set up to measure air and water quality.
- i. Developing indigenous process equipment, materials including metal-metal composites, fiber reinforced polymer composites and nano materials embedded composites for space, defense and avionic applications
- j. Developing compact wind mills
- k. Developing hybrid automobiles and all-terrain vehicles
- l. Rainwater harvesting over 6.5 million liters in the campus & Setting up STP plant in the campus for 250,000 liters
- m. Developing the 4th Generation antennas for communication technology for defense and space applications.
- n. Developing novel medical instrumentation for rural and telemedicine
- o. Establishing clean room facility for development of Large Area and Flexible Microelectronics and Vacuum Nano electronics

D. Revised Focus on Research in line with the Institutional Vision

By identifying institutional strength, interdisciplinary research areas have been identified, with an emphasis on creating a **Unique Selling Point (USP)** for the institute. The institute has also decided to work with industries big and small, in line with the RVCE Vision, to help RVCE and nation transform into a leader in Knowledge and Technology, as India was 500 years ago. RVCE is looking to contribute to sustainable development as practiced in ancient India and as advocated by the father of the Nation, Mahatma Gandhi. The motto is, “**leveraging global knowledge and delivering local solutions**”.

In this process, RVCE engages with industries and institutions:

1. From small incremental development to development of disruptive innovation
2. Carrying out **Right from Market Survey to Concept Creation, Proof of Concept, Development, verification & Testing to Pilot production.**
3. Provision for end to end solution with indigenization and provision for scale up in collaboration with industries.

Research activities can be broadly classified under the following interdisciplinary research areas as given below:

- a. Materials & Manufacturing engineering with additional capability for Design for Optimization of Manufacturing processes and production. Including polymers, composites, wide range of nano materials (metals, ceramics and semiconductors) and amorphous materials.
- b. Sensors, Networks and Communication (up to THz).
- c. Nano Science, Surface Engineering & MEMS.
- d. Data Mining / Data warehousing or Business Intelligence, Cloud Computing, High Performance Computing, Natural Language Processing,
- e. Environment Friendly and Sustainable Technologies which Enable Smart buildings and Smart Cities including Structural Engineering.
- f. Clean & Renewable Energy, Energy Efficiency & Management,
- g. Large Area and Plastic / Printable (Flexible) Microelectronics.
- h. Advanced Instrumentation including Medical Instrumentation.
- i. Highways and Transport technology.
- j. Signal & Image processing.

Some of the ongoing projects in line with the Institutional Vision of “Innovation for Sustainable and Inclusive Development” include:

- a. CISCO-RVCE Centre of Excellence in Internet of Things (IoT)
- b. **DST funded** project for Development of a novel nanomaterial enabled, inexpensive, amorphous silicon based Plasmonic solar cell on glass substrate.
- c. Developing environment friendly concrete for housing construction which also uses lesser water and dries faster, including using waste from different sources
- d. Study & Development of Image compression Algorithm for satellite Images for use for Bhuvan (**ISRO**)
- e. **ISRO** funded facility for monitoring air, wind, weather, noise and water and assessing its quality as also GPS and RS data analysis used for environment monitoring and city and town planning.
- f. Developing novel medical instrumentation including compact hand held X-ray sources and Ultrasound sources for affordable healthcare and telemedicine application
- g. Developing novel room temperature grown Nanocarbons based thin film transistor.
- h. A biofuel production and characterization facility (50 liters)

- i. Developing compact wind mills, solar PV and thermal systems and integrated power generation study
- j. Developed hybrid automobiles and autonomous aerial and underwater vehicles
- k. Harvesting over 10 million liters of Rainwater in the campus (**funded by KPMG**) and set up an STP plant in the campus for 250,000 liters, scalable to 5 Lakh liters. Also running an Effluent Treatment Plant (ETP).
- l. First institute in the country to offer courses and establish clean room facility for development of Large Area and Flexible Microelectronics and Vacuum Nano electronics. (technology useful for future use and throw electronics and wearable electronics)
- m. Centre for Skill and Personality development programme for SC & ST students funded by AICTE.

1.2.3 Student Activities and Community Services Programme:

Participation in NSS, NCC, Sports, and Cultural Activities are encouraged and given prime importance for overall development of the students. Sports persons are given adequate facilities in terms of allowances, uniforms and attendance to compete in university, interstate, national and international competitions. There are various cultural clubs in which the students can participate. Pooja Alva and M. Arvind have represented India in World Universities meet and World championships in various countries including Spain and Russia. 3 RVCE students represented VTU at the inter-varsity Chess tournament at Malaysia and even enhanced their ELO ratings by winning individual and team prizes.

RV Centre for Social Services and Skills Promotion (SKIP) and Women Empowerment and Skill Training (WEST) programme, helps socially deprived women to become self reliant by offering computer training free of cost. As a part of the social responsibility a FM Community Radio project is in the pipeline. RVCE can boast of its alumni cell and is in the process of further strengthening its links with over 30000 alumni.

Many prominent RVCE alumni include Mr. Anil Kumble, Mr. Chetan Babbur in sports, Mr. Ashok Nayak Former HAL Chairman, Gopichand Kattargadda former MD GE JWTRC and currently CTO Tata group of companies, and Mrs. Vijayalakshmi Bidri I.P.S. Officer, the list is endless. RVCE alumni also include many top CEOs, MDs, Sr.VP, VPs and General Managers in many National and International MNCs and state and central PSUs.

1.2.4 Infrastructure: The 49.22 Acres of serene Green Campus of RVCE has state of art infrastructure that provides excellent learning ambience located in the Silicon Valley of India, Bengaluru.

- a. 7,37,000 sqm of instructional area housing 15 departments.
- b. 154 well-furnished class rooms and tutorials, most of them equipped with Multimedia Projectors supporting modern teaching techniques.
- c. 13 Air conditioned seminar halls spread over the Campus.
- d. Spacious Laboratories / workshops with latest equipment catering to the respective programme.
- e. Interdisciplinary Research laboratories with latest equipment and software including facility for semiconductors device and integrated circuit fabrication.
- f. Fully equipped Placement and Training department with seminar hall, Group Discussion and interview rooms.
- g. The central Library spread over 2088 sqm also has Digital library and internet facilities.
- h. Electrical Diesel generator backup of 780 KW and 14KW of grid tied Solar power.
- i. Girls Common Room

- j. Entire campus is completely networked and also Wi-fi enabled for faculty and students.
- k. Fully equipped health center with six bedded capacity and one isolation ward.
- l. The sports facilities include Indoor Basketball court, Indoor shuttle Badminton court, Synthetic Tennis court, Football and Cricket grounds, spread over 25500 sqm.
- m. Multi Gymnasium Facility & fitness center.
- n. Four boys Hostel blocks in the campus that can accommodate about 1200 students and two girls hostels near the campus that can accommodate about 350 students.
- o. Other support facilities available are: Post Office, Bank with ATM facility, Pharmacy, stationary shop and reprographic facility
- p. Spacious and modern Food Court.
- q. State-of-Art Incubation Center.
- r. Centre of Competency for Automation Technologies (Bosch Rexroth Lab).
- s. High Performance Computing Lab,
- t. Mercedes-Benz workshop
- u. Soorya Mitra Smart Grid lab.

1.2.5 Faculty

The strength of RVCE is its Faculty and staff. There are around 400 faculty members in various cadres namely Professors, Associate Professors, Assistant Professors and Visiting Professors as per AICTE norms. The faculty members have wide experience in academics, as scientists, industry professionals and Researchers drawn from various specializations and reputed institutions & organizations. Faculty are not only expertise in modern teaching methodologies, they also have research projects and publications to their credit. The faculties are ably supported by 250 technical and administrative staff.

1.2.6 Students Achievements

Over the years, there have been over **200 toppers** (rank holders and medalists) in University examinations. Over **100 sportspersons** have represented University, State and National in various levels of events. Many students have won prizes in Cultural Activities at University, State, National and International level events starting from dramatics to Quizzing. Due to a strong sports and cultural activities RV has been ranked the best institution in this arena.

1.2.7 The Industry-Institute Collaboration

Industry representatives are members of the BoS and AC. There are a few electives offered by industries to fill the gap between the industry requirement and curriculum. Technical lectures and industry visits are arranged by all the departments. Besides the programmes and courses, the students also get the opportunity to take up internship at various industries, government organizations and public-sector undertakings, advanced R&D labs under DRDO, ISRO, CSIR and other agencies. The institution facilitates core courses, local and global electives in coordination with industries.

Innovation and Incubation Center have been setup, 4 companies are in process of being incubated.

Thus, multiple platforms have been created for both students and faculty to jointly engage in Innovative projects and research. The outcomes of these efforts have been exhibited at science exhibitions, trade fairs and they have been highly appreciated by the scientific & business community.

In conclusion, RVCE with its extensive infrastructure, state-of-art technology, expansive laboratory facilities, valuable affiliations and recognitions, networked partner industries, R&D labs and inspiring academic results, is keen to ensure that in the knowledge economy, the institute truly becomes an international class institute, in tune with its vision and mission. It is the aspirations of faculty and management to nurture and boast of many innovators and entrepreneurs, besides producing quality engineers and technologist for the country.

1.3 Academic Programmes Offered

RVCE offers the following Undergraduate, Post-graduate & Doctoral study programmes. RVCE also offers a wide range of proficiency courses, German courses and plans to start a series of certificate and diploma courses.

a) Undergraduate Programme

Sl. No.	Programmes	Year of Starting
1	B.E. in Civil Engineering	1963
2	B.E. in Mechanical Engineering	1963
3	B.E. in Electrical & Electronics Engineering	1963
4	B.E. in Electronics & Communication Engineering	1972
5	B.E. in Industrial Engineering & Management	1980
6	B.E. in Electronics & Instrumentation Engineering	1981
7	B.E. in Chemical Engineering	1982
8	B.E. in Computer Science & Engineering	1984
9	B.E. in Telecommunication Engineering	1992
10	B.E. in Information Science & Engineering	2000
11	B.E. in Biotechnology	2002
12	B.E. in Aerospace Engineering	2015

(b) Postgraduate Programmes

Sl. No.	Programmes	Year of Starting
1	Master of Computer Applications	1997
2	M.Tech in Product Design & Manufacturing	2004
3	M.Tech in Digital Communication	2004
4	M.Tech in Computer Science & Engineering	2004
5	M.Tech in Computer Integrated Manufacturing	2005
6	M.Tech in VLSI Design & Embedded Systems	2005
7	M.Tech in Computer Network Engineering	2005
8	M.Tech in Machine Design	2006
9	M.Tech in Communication Systems	2006
10	M.Tech in Power Electronics	2006
11	M.Tech in Bio-medical Signal Processing & Instrumentation	2006
12	M.Tech in Structural Engineering	2006
13	M.Tech in Software Engineering	2006
14	M.Tech in Information Technology	2007
15	M. Tech in Highway Technology	2009
16	M. Tech in Biotechnology	2011
17	M.Tech in Bioinformatics	2012
18	M.Tech in Chemical Engineering	2012
19	M.Tech. in RF & Microwave	2013

C) Diploma (UG & PG) and Certificate Courses /Proficiency courses

The institution has a provision to start Diploma (UG and PG) programmes under autonomous scheme. This will help in-house, external professionals and students to gain additional skills in the state of Art Technology and Science.

Proficiency / Certificate courses are also being offered from time to time for both UG and PG students for upgrading their knowledge and skills. Such courses are open to outside participants also.

d) Research Centers:

The following departments offer M.Sc (Engg.) by research and Ph.D., recognized by VTU.

Sl. No.	Programme	Year of Starting
1.	Mechanical Engineering	1999
2.	Chemical Engineering	2000
3.	Electronics & Communication Engineering	2004
4.	Industrial & Engineering Management	2004
5.	Telecommunication Engineering	2004
6.	Computer Science & Engineering	2004
7.	Civil Engineering	2005
8.	Biotechnology	2008
9.	Chemistry	2008
10.	Information Science & Engineering	2011
11.	Master of Computer Applications	2011
12.	Physics	2011
13.	Electronics and Instrumentation Engineering	2011
14.	Mathematics	2011
15.	Electrical and Electronics Engineering	2012
16.	Library and Information Centre	2015

1.4 The Department of Master of Computer Applications was established in year 1997 and is the first PG programme started in RVCE. The programme offered by the department include, Masters of Computer Applications, M.Sc by Research and Ph.D. Degree. These programmes are affiliated to Visvesvaraya Technological University, Belagavi. The programme obtained academic autonomy in the year 2016. The sanctioned intake of students for first year MCA is 120 students and additional 20% intake as lateral entry to 3rd Semester MCA. The MCA programme offered at RVCE is accredited for the third time by National Board of Accreditation, New Delhi since June 2017. Our graduates have the distinction of obtaining high positions in reputed IT industry. The faculties are from diverse background, committed and highly qualified with Doctorates in various specializations. They deliver quality education to students through their rich research experience. The faculties are engaged in active research works and projects funded by AICTE, NRB, DRDO agencies and industries to the tune of Rs. 80.51 Lakhs have been completed in the last three years and ongoing research projects worth Rs. 29 Lakhs. Faculties have also taken up consultancy works and completed 4.25 Lakhs worth projects. The department has state-of-the-art infrastructure and computing facilities supported by high speed Ethernet and wireless access.

Vision

Pioneering in ICT Enabled Quality Education and Research with a focus on Sustainable and Inclusive Applications

Mission

- M1** To adapt novel methodologies for quality education through experiential learning
- M2** To empower students with continuous, holistic education, emphasizing on discipline, ethics and social commitment
- M3** To become a vibrant knowledge center for research and software development
- M4** To continuously build capacity steering towards industry- institute collaborative research and entrepreneurial competencies
- M5** To utilize and develop free and open source software tools for sustainable and inclusive growth

Programme Educational Objectives (PEO)

MCA graduates will be able to

- PEO1** Practice software engineering principles and standards to develop software to meet customer requirements across verticals
- PEO2** Contribute to build sustainable and inclusive applications using mathematical, simulation and meta heuristic models
- PEO3** Demonstrate entrepreneurial qualities through individual competence and team work
- PEO4** Achieve successful professional career with integrity and societal commitments leading to lifelong learning

Programme Outcomes (PO)

MCA graduates will be able to

- PO1** **Computational Knowledge:** Acquire in-depth computational knowledge and mathematics with an ability to abstract and conceptualize models from defined problems and requirements
- PO2** **Problem Analysis:** Identify, formulate, conduct literature survey and solve complex computing problems through analysis as well as provide optimal solutions
- PO3** **Design / Development of Solutions:** Design and evaluate solutions for complex problems, components or processes that meet specified needs after considering public health and safety, cultural, societal, and environmental factors
- PO4** **Conduct investigations of complex Computing problems:** Conduct literature survey to analyze and extract information relevant to unfamiliar problems and synthesize information to provide valid conclusions and interpret data by applying appropriate research methods, tools and design experiments
- PO5** **Use of Modern Tool:** Create, select, adapt and apply appropriate techniques, resources and modern IT tools to complex computing system activities, with an understanding of the limitations
- PO6** **Professional Ethics:** Understand and commit to professional ethics and cyber regulations, responsibilities and norms of professional computing practices

- PO7 Life-long Learning:** Engage in lifelong learning independently for continual development to improve knowledge and competence as a computing professional
- PO8 Project management and finance:** Demonstrate knowledge and understanding of management principles and apply these to multidisciplinary software development as a team member and manage projects efficiently as a leader considering economical and financial factors
- PO9 Communication Efficacy:** Understand and communicate effectively with the computing community and with society at large, regarding complex computing systems activities confidently and effectively by writing effective reports and design documentations by adhering to appropriate standards, make effective presentations and give / receive clear instructions
- PO10 Societal and Environmental Concern:** Understand responsibilities and consequences based on societal, environmental, health, safety, legal and cultural issues within local and global contexts relevant to professional computing practices
- PO11 Individual and Team Work:** Function effectively as an individual, as a member or leader in diverse teams in multidisciplinary environments
- PO12 Innovation and Entrepreneurship:** Identify a timely opportunity for entrepreneurship and use innovation to pursue and create value addition for the betterment of individual and society at large

Programme Specific Criteria (PSC)

The MCA programme will enable the students, by the time they graduate to

- PSC1** Explain the principles of mathematics, computing and business foundations
- PSC2** Demonstrate the use of software tools and technologies relevant to various verticals
- PSC3** Design and develop software products, processes and systems for real world situations

Programme Specific Outcomes (PSO)

MCA graduates will be able to

- PSO1** Solve real world computing system problems of various industries by understanding and applying the principles of mathematics, computing techniques and business concepts
- PSO2** Design, test, develop and maintain desktop, web, mobile and cross platform software applications using modern tools and technologies

2.0 ADMISSION PROCESS

2.1 Eligibility Rules for MCA Programme (Regular)

The approved sanctioned intake by AICTE is 120 and additional 20% for lateral entry. For admission to Master of Computer Application programme the candidates shall have passed Bachelor Degree with not less than 50% of marks in aggregate of all years of degree examination with Mathematics or Statistics or Computer Science or Computer Programming or Computer Applications or Business Mathematics or Business Statistics as one of the optional or electives. However, in the case of candidates belonging to Scheduled Castes, Scheduled Tribes and Category- I, the marks shall be not less than 45%.

Provided further, as specified in the first proviso the candidate should have studied and passed Mathematics as a subject of study either at degree level or at 10+2 level with 50% of marks. However, in the case of candidates belonging to SC/ST and Category- I, 45% of marks in that subject shall be eligible for Admission.

For more clarity visit www.vtu.ac.in

2.2 Admission Procedure for MCA Programme (Regular)

There shall be an Entrance Examination for admission to the MCA Programme. Candidates must write Eligibility test PGCET (conducted for Karnataka Students only) / CMAT / KMAT (Management Quota for all students) conducted by KEA / AICTE / KPPGCA respectively every year and notified separately by each organization. For Government seats, ranks obtained in PGCET entrance exam shall be considered. For Management seats, ranks obtained in PGCET/ CMAT / KMAT entrance exam shall be considered. For more details log on to

- i. PGCET: www.kea.kar.nic.in**
- ii. CMAT: www.aicte-cmat.in**
- iii. KMAT: www.kmatindia.com**

2.3 Eligibility Rules and Admission Procedure for MCA Programme (Lateral Entry)

Under **lateral entry**, admission to II year / III semester MCA course shall be open to the candidates who are holders of Bachelor's Degree from recognized University in **BCA** and **B.Sc. (IT / CS)** or equivalent qualification and who have secured not less than 50% of marks in aggregate of all the years of degree examinations.

Provided that the candidates seeking Admission to II year / III semester MCA course as specified in the first proviso, should have studied and passed Mathematics as a subject of study either at degree level or at 10+2 level. Admission for the lateral entry is through KEA (Karnataka Examination Authority) counseling.

2.4 Programme Duration for MCA

- a. The total duration of MCA programme: Three (3)Years(Six Semesters) for Regular and Two (2)Years (Four Semesters) for the students who join MCA under the lateral entry stream.
- b. The maximum duration for MCA programme: Six(6) Years for Regular and Four (4) Years for Lateral entry stream students

3.0 ACADEMIC PLANNING

3.1 Academic Planning for MCA

- a. The curriculum is designed as per OBE and shall include Mathematical Foundations, Professional core courses, Soft core courses, Professional Elective courses and Project works.
- b. The percentage distribution / coverage of courses are as per the guidelines given by VTU / UGC / AICTE and Ministry of HRD, New Delhi

Table 3.1 – Credit Distribution

Category	Min Credits	Max Credits	Credits to be earned for 2018 Scheme MCA
Core (including soft core)	31	42	74
Elective	15	27	30
Seminar	02	10	02
Industrial Internship & Project Work	15	27	26
TOTAL			132

- c. Board of Studies(**BoS**) for MCA department is formed as per the UGC/VTU guidelines and takes care of formation of Scheme and Syllabus. The same is then, approved by the Academic Council (AC) of the Institution.
- d. There shall be an equal emphasis on theory, practical / laboratory in various courses.
- e. Emphasis is also given for experiential learning through projects, assignments, seminars and other tasks.
- f. Additions and deletions of any course must be recommended by respective BoS and approved by the Academic Council of the Institution.
- g. Minor and Major projects are part of the curricula.
- h. All students must undergo **Continuous Internal Evaluation (CIE)** which includes tests, quizzes, assignments and seminars.
- i. At the end of the semester eligible students must take **Semester End Examination (SEE)** for both theory and practicals.
- j. Student declared as **Not Satisfied Attendance Requirements (NSAR)** or **Not Satisfied Sessional Requirements (NSSR)** is not eligible to take up **Semester End Exams (SEE)** in that Course including laboratory, if any.

3.1.1 Calendar of Events

College Timings: Monday to Friday: 9.00 AM to 4.45 PM

1st /3rd/5th Saturday: 9.00 AM to 1.30 PM

If special / remedial classes are arranged by the departments students will have to mandatorily stay beyond working hours/ time table including Saturdays. These classes will be counted for attendance.

**ACADEMIC CALENDAR FOR MASTER OF COMPUTER OF APPLICATIONS
2018 BATCH - AUTONOMOUS SCHEME
FIRST SEMESTER**

10-10-2018 to 25-01-2019

EVENT	DATES	REMARKS
Inauguration of First Year	10-10-2018	
Commencement of classes	10-10-2018	
Test I & Quiz I (Compulsory)	22-11-2018 to 24-11-2018	Continuous Internal Evaluation (CIE)
Counseling & Student Performance Review-I	28-11-2018	
Remedial classes for underperforming students	28-11-2018 to 5-12-2018	
Faculty appraisal by students	29-11-2018	
Assignment Submission- Phase- I	14-12-2018	Continuous Internal Evaluation (CIE)
Test – II and Quiz II (Compulsory)	20-12-2018 to 22-12-2018	Continuous Internal Evaluation (CIE)
Counseling & Student Performance Review II	26-12-2018	
Faculty appraisal by students	27-12-2018	
Remedial classes for underperforming students	31-12-2018 to 5-01-2018	
Assignment Submission – Phase -II	04-01-2019	Continuous Internal Evaluation (CIE)
Test – III (Compulsory)	16-1-2019 to 18-1-2019	Continuous Internal Evaluation (CIE)
Continuous Internal Evaluation (CIE) - Practical's	21-1-2019 to 23-01-2019	Continuous Internal Evaluation (CIE)
Courses End Survey by faculty	22-1-2019	
Finalization of CIE	25-1-2019	
Semester End Examination (Theory)	28-1-2019 to 7-2-2019	
Semester End examinations (Practical)	8-2-2019 to 10-2-2019	
Declaration of results	16-2-2019	
Applying for photo copies of answer scripts	18-2-2019 to 20-2-2019	
Issue of photo copies of answer script	23-02-2019	
Applying for revaluation /make up examination	20-2-2019 to 23-2-2019	
Make-up Examination	26-02-2019 to 6-3-2019	
Declaration of Results of Make Up Exam	13-3-2019	

**ACADEMIC CALENDAR FOR MASTER OF COMPUTER
APPLICATIONS
AUTONOMOUS SCHEME
SECOND SEMESTER
18-02-2019 to 10-06-2019**

EVENT	DATES	REMARKS
Registration	18-02-2019 to 20-2-2019	
Commencement of classes	18-02-2019	
Test-I and Quiz- I (Compulsory)	28-03-2019 to 30-03-2019	Continuous Internal Evaluation (CIE)
Counseling and Student performance review-I	4-04-2019	
Remedial classes for underperforming students	4-04-2019 to 16-04-2019	
Assignment Submission	08-04-2019 to 13-04-2019	Continuous Internal Evaluation (CIE)
Faculty appraisal by students	6-04-2019	
Test- II and Quiz- II (Compulsory)	06-05-2019 to 8-05-2019	Continuous Internal Evaluation (CIE)
Counseling and student performance review-II	11-05-2019	
Faculty appraisal by students	11-05-2019	
Assignment Submission	20-05-2019 to 25-05-2019	Continuous Internal Evaluation (CIE)
Test –III (Compulsory) Quiz – III (Compulsory)	03-06-2019 to 05-06-2019	Continuous Internal Evaluation (CIE)
Submission of Self Study and Minor project reports	08-06-2019	Continuous Internal Evaluation (CIE)
Course End Survey by faculty	07-06-2018	
Finalization of CIE	10-06-2019	
Semester End Examination(Theory)	13-06-2019 to 22-06-2019	
Semester End Examinations(Practical)	24-06-2019 to 26-06-2019	
Declaration of results	3-07-2019	
Applying for photo copies of answer scripts	4-07-2019 to 6-07-2019	
Issue of photocopies of answer scripts	10-07-2019	
Applying for revaluation and make up Examination	6-07-2019 to 10-07-2019	
Make up examination	13-07-2019 to 20-07-2019	
Declaration of results of makeup examination	28-07-2019	

**ACADEMIC CALENDAR FOR MASTER OF COMPUTER APPLICATIONS
AUTONOMOUS SCHEME**

SUMMER SEMESTER - 05-07-2019 to 14-08-2019

EVENT	DATES	REMARKS
Registration for Summer Semester	5-07-2019	
Commencement of classes	5-07-2019	
Test-I	26-07-2019 to 27-07-2019	Continuous Internal Evaluation (CIE)
Test-II	09-08-2019 to 11-08-2019	Continuous Internal Evaluation (CIE)
Finalization of CIE	14-08-2019	
Semester End Examinations (Theory)	16-08-2019 to 26-08-2019	
Semester End Examinations (Practical)	28-08-2019 to 30-08-2019	
Declaration of results	7-9-2019	
Commencement of ODD semester	02-09-2019	

3.2 SEMESTER REGISTRATION / DROPPING /WITHDRAWAL

- (a) **Every student has to register in person** at the beginning of every semester as per the notification issued by the institution from time to time. **Such of the students who do not register within one week from the date of commencement of the semester, shall not be eligible to take up that particular semester. Parents are advised to note.**
- (b) In case of any delay to register due to any exigency, the **parent and student should intimate the Principal / Director of the department, RVCE, in advance, indicating the reason for delay** in registering. However, for such students also, **the attendance requirement shall be calculated from the date of commencement of the semester** and not from the date of joining.
- (c) A student may be barred from registering for a semester for specific reasons for not registering, non-payment of fees, not eligible for the current semester due to lack of clearing enough credits etc.
- (d) **Dropping of Courses:** A student can drop a course under the guidance of the counselor if the counselor and parent feel that the student cannot cope up with all the courses. This dropping of course shall be intimated to the **Dean (Academics)** through the Director of the department, before the dropping date as announced. However, the total credits should not fall short of 18 (eighteen) credits which are the minimum number of credits to be registered per semester. The dropped courses are not recorded in the Grade Card. **This facility is not applicable for first year students.**
- (e) **Withdrawal from Courses:** A student may opt to withdraw from a course on or before the date specified. Such student who wants to utilize this facility has to submit an application through the Director of the department to Dean (Academics), in consultation with counselor, parent and Director of the department. The candidate should have fulfilled the attendance criteria for the course/s that he / she want to withdraw. The withdrawn course(s) are recorded in the Grade Card as 'W' grade. However, such withdrawals will be permitted without prejudice to the minimum number of credits as specified in (d).
This facility is not applicable for first year students.
- (f) **The Dropping and withdrawal facilities are available only for REGULAR Semester(s)**

3.3 ATTENDANCE REQUIREMENT

- a) Each semester is considered as a unit and the candidate has to put in a minimum attendance of 85% in each course with a provision for condonation of 10% of the attendance by the Principal, RVCE for reasons such as (i) serious medical condition or (ii) representing the Institute / University / State / Nation in sports, cultural, technical or academic activity with the permission of the college authorities. Even in such cases, a minimum of 75% attendance is absolutely mandatory. The students representing the institution at University, National and International level, the attendance will be marked as "P". However, relevant documents have to be submitted and prior permission must be obtained from the Principal. The students who do not satisfy this condition will be declared as **NSAR (Not Satisfied Attendance Requirement)**.
- b) The basis for the calculation of the attendance shall be the period prescribed by the Institution through its calendar of events. For late admission / transfer of students from other institutes / universities the **date of admission to First year MCA** would be considered for the calculation of attendance (this rule does not apply to higher semesters).
- c) The students will be informed about the attendance position periodically by the college notifying the status on the notice board before each CIE and during the multiple counseling sessions. **Student declared as NSAR is not eligible to take up SEE in that particular course.**
- d) If a student does not fulfill the attendance requirements in any course, he/she is not permitted to attend the Semester End Examination in that particular course.
- f) **Temporary Break of Study from the Programme:**
 - 1) A candidate is normally not permitted to break the study. However, if a candidate intends to temporarily discontinue the programme in the middle for valid reasons (such as accident or hospitalization due to prolonged ill health, grave calamity in the family or any other serious happenings) and wants to rejoin the programme later in respective semester, he / she shall apply to the Principal, RVCE well in advance. Such application shall be submitted within at least 6 weeks of the commencement of the semester or from the date he/she has attended the classes, whichever is later, stating fully the reason for such a withdrawal, together with supporting documents and endorsement of his/her parents/guardians through the Director, MCA Department.
 - 2) The institute shall examine such an application and if it finds the case to be genuine, it may permit the student to temporarily withdraw from the programme. Such permission is accorded only to those (a) who have the possibility to complete the prescribed programme requirements within the time limits specified by the university. (b) Who do not have any outstanding dues / demand at the college / University level including tuition fees, any other fees library materials etc.
 - 3) The candidate has to rejoin the semester after the break from the commencement of the respective semester as and when it is offered.
 - 4) **The total period for completion of the programme is reckoned from the commencement of the semester to which the candidate was first admitted and shall not exceed the maximum period as specified in 2.4b. The maximum period includes the break period.**
 - 5) If any candidate is detained for any reason, the period of detention shall not be considered as 'Break of Study'.
 - 6) A student availing temporary withdrawal under the above provision shall be required to pay such fees and/or charges as may be fixed by the college until such time as his/her name appears on the Students' Roll list. However, it may be noted that the fees/charges once paid shall not be refunded.
 - 7) Normally, a student will be entitled to avail of the temporary withdrawal facility only once during his/her studentship of the programme. However, any other concession for the student shall have to be approved by the Academic Council of the College. Hence, the student shall take the advice of the Principal to use the above provision only in exceptional cases.

3.4 TERMINATION FROM THE PROGRAMME:

A student shall be required to withdraw from the programme and leave the Autonomous College on the following grounds.

- (i) Failure (Getting F Grade) and not passing a course to earn credits for the same, in spite of five attempts.
- (ii) Failure to secure CGPA ≥ 6.00 on three consecutive occasions to lead the student being asked to discontinue the programme and leave the College. However,
 - Failure to secure a CGPA ≥ 6.00 at the end of any semester for the first time, to attract warning before approval of the student to continue in the following semester (on probation).
 - There shall be a provision for the rejection of total performance of a semester and re-registration for the semester. This shall be done only once in the entire course of studies.
- (iii) Absence from classes for more than six weeks at a time in a semester without leave of absence being granted by the competent Authority
- (iv) Failure to meet the standards of discipline as prescribed by the college from time to time.

3.5 SEMESTER SCHEME

Each academic year is divided into two main semesters and one summer semester with their calendar, duration and academic activities fixed in advance by the College, as approved by the AC.

- (a) The plan for implementing the Semester Scheme in the College is given in the Table 3.4:

Table 3.4 Breakup of Academic Year into Semesters

No. of semesters	There are two main semesters and one summer semester: NOTE: Summer semester is provided to assist failed students. The student has to pay a special fee prescribed by the college to register for a course in the summer semester. The summer semester is provided to help the student in not losing an academic year. It is optional for a student to make use of summer semester. Summer semester is a special semester and the student cannot demand it as a matter of right. Summer semester is also used for offering add-on courses and Proficiency Courses. Students can also take up internship/ Practical training / Industrial Training on the recommendation of Director, MCA in summer semester. Students those take up failed courses in summer semester cannot be offered add-on courses, Proficiency Courses internship/ Practical training / Industrial Training as these could be full time courses.
Semester Duration	Main Semester is for 19 Weeks during odd and even semester including the exams Summer Semester shall be for 8 Weeks including the exams
Academic Activities (Break up in weeks)	Regular Semester: Registration for course- Three days Course work - Sixteen weeks from the starting date of registration Examinations- Two weeks Declaration of Results- One week TOTAL: 19 Weeks each. Summer Semester (only for students with NSSR/ NSAR/ F/ W grades): Registration of courses- Three days Course work – Six weeks from the date of starting of registration Examination- 9 days Declaration of Results: 3 days TOTAL: Eight weeks.
Inter-Semester Recess	For Students not appearing for Summer semester: After odd semester two weeks and after even semester ten weeks. Students are advised to take up internship or proficiency courses as and when offered, during this period to improve their employability.

Examinations	Continuous Internal Evaluation (CIE) and Semester End Examination (SEE), both will have equal weightage in the student's performance evaluation in Course Work / Laboratory Work and other activities. (NOTE: The CIE tests would be conducted throughout a semester on dates announced in advance as per the calendar of events and its results made known to the students from time to time. This will help the students to decide on Dropping of courses or Withdrawal from courses in consultation with their counselor.)
Academic Calendar	The calendar of events for each academic year will be announced for odd semester, even semester and subsequent Summer before the beginning of each academic year.

3.5 CREDIT SYSTEM:

The **Choice Based Credit System (CBCS)** is followed for the MCA Programme. In the credit system, the course work of students is unitized and one credit is assigned to each unit, after a student completes the teaching learning process as prescribed for that unit and is successful in its assessment. One unit of course work and its corresponding one credit is referred to a main semester (odd/even) and shall be equal to

- Theory courses, conducted for 1 hour/week during a semester shall be considered for earning one credit.
- Laboratory courses or tutorials, conducted for 2 hours/week during a semester shall be considered as one credit.

Note:

- The above value shall be multiplied by a factor of 2 in the case of Summer Semester.
- Students are advised to attend and participate in additional, non-credit theory, practical training, study tours, guest lectures that do not carry any credits which may be prescribed in the curriculum.

3.6 Credit Structure

Distribution of credit structure is shown in the Table 3.6

Table 3.6 Credit Structure

Lecture (hrs/wk/sem)	Tutorials (hrs/wk/sem)	Lab. Work (hrs/wk/sem)	Credits (L: T: P) *	Credits (Total)
3	0	0	3:0:0	3
2	2	0	2:1:0	3
2	0	2	2:0:1	3
2	2	2	2:1:1	4
0	0	6	0:0:3	3

3.7 CREDIT REQUIREMENT FOR MCA PROGRAMMEME

The total number of credits required to be earned by students to qualify for the MCA Degree programme is given in Table 3.7.

Table 3.7 Credit required to be earned by students

Programme	Normal Duration Years (Semesters)	Total No. of credits to be Earned (Average/Semester = 22)
PG Degree MCA	Three (3) Years or six Semesters	132
PG Degree MCA (Lateral Entry)	Two years (2) or four Semesters	88

4.0 EVALUATION SYSTEM

4.1 ACHIEVEMENT TESTING

a) Achievement testing will be done in two parts, as follows, both of them being important

In assessing the student achievement:

- I. Sessionals, involving **Continuous Internal Evaluation (CIE)**, will be conducted by the course handling faculty all through the semester. The evaluation process has three parts, consisting of quiz and descriptive / analytical type assessment spread throughout the semester, tests, weekly/fortnightly, assignments, problem solving, group discussions and seminars depending on the course. CIE may also be evaluated by experiential learning, collaborative learning, project based learning, problem based learning, web based learning, game based learning, compute-support collaborative learning, mobile assisted learning, seamless puzzle based learning. The tests have to be written in the official blue books. It is the student's responsibility to see and confirm the evaluation and marks obtained after each test. After ascertaining that he/she has obtained the marks as per the performance, the student shall sign in the blue book after each test.
- II. **Scheme for CIE for Theory:** CIE consists of three Tests each for 50 marks, two quizzes of 10 marks each and assignment for 30 marks. All the tests and quizzes are compulsory.
 - The test shall be conducted for 50 marks each and is then reduced to 50 marks
 - 2 Quizzes are conducted for 10 marks each and consolidated to 20 marks
 - Assignments are given for 30 marks
 - Total CIE = 50+20+30 = 100

III. Scheme for CIE for Practical:

CIE for practical consists of continuous evaluation of the programmes in the lab during every lab hour. Every programme is evaluated for 10 marks and consolidated for 40 marks. One lab internal is conducted at the end of the semester for 50 marks and reduced to 10 marks.

Table 4.2 Scheme for Continuous Internal Evaluation for Practical

Continuous Internal Evaluation (CIE)		
Practice		Total Marks
Evaluation Method	Marks	
Lab conduction	40	50
Lab Test	10	

Table 4.3 Break-up Scheme for Continuous Internal Evaluation for Practical

Continuous Internal Evaluation (Practice)	Marks	Total Marks
Performance of the student weekly in laboratory for every programme		
- Execution with formatted output	07	
- Viva-Voce	03	
Total	10	40
Test		
Write up and Viva voce (40%)	04	10
Execution (60%)	06	
Total		50

Weekly assessment – The performance of the student in each lab will be assessed for 10 marks and finally the total marks will be reduced to 40 marks.

Note: Mandatory Instructions to be followed by the students

- a. The student must score minimum 50% marks in CIE to qualify to take up SEE in that course. Detailed break up of passing standards is depicted in Table 4.9
- b. The marks obtained by the student in CIE will be displayed in the department and the students are expected to affix their signatures during a prescribed period as a confirmation of their verification of the marks. In case any student fails to verify and affix the signature the allotted marks to be accepted by the student.
- c. Faculty Counselors will monitor the student's CIE performance and advice the student suitably.
- d. This would also help in planning the course load of students in the successive semesters based on faculty advice and on their performance in CIE and SEE in the preceding semester and of CIE in the current semester.

IV. Terminal Examination designated as **Semester End Examination (SEE)** will be conducted jointly with external examiners. This will include a written examination for theory courses and practical / design examination including viva-voce for laboratory / design courses. Controller of Examinations (CoE) in coordination with Dean Academics, Director, Department of MCA, Board of Examiners implements the SEE process.

Scheme of Semester End Examination - Theory

The question paper will be set for maximum of 100 marks and shall consist of TEN questions from FIVE units with 20 marks each. Out of the ten questions, students must answer FIVE questions; one from each unit. The questions will have Internal Choice with maximum 3 sub divisions. The duration of the SEE will be for 3 hours.

Both the questions under each unit will be of the same complexity in terms of COs and Bloom's taxonomy level.

- (a) All answer scripts of theory courses will be evaluated by two examiners
- (b) If the difference between the marks awarded by the two evaluators is **less than 15%** of the maximum marks, the marks awarded to the candidate shall be the average of the two marks.
- (c) If the difference in marks between the two evaluators is **more than 15%** it will be evaluated by a 3rd evaluator and the average of the two nearest marks will be considered. However, if one of the three marks falls exactly midway between the other two, then the higher marks shall be taken for averaging.
- (d) The number of credits is clearly defined in the scheme of study. All the students of MCA are required to compulsorily register for all the courses prescribed for each semester.

Scheme of Semester End Examination - Practicals

SEE for practical will be jointly conducted and evaluated by two examiners. The duration of practical examination is 3 hours and is evaluated for 50 marks.

The break up for conduction of practical examination is

- (i) Procedure and Write up : 20% of max marks
- (ii) Conducting the practical : 60% of max marks
- (iii) Viva Voce : 20% of max marks

III. Minor Project Work

- The student must implement Minor project in 4th Semester and 5th Semester with maximum of two members in a team.
- The student shall undertake the Minor project-I during 4th semester depending on the electives studied in the previous/ current semester/ Research based / Industry Oriented
- The student shall undertake the Minor Project – II during 5th semester depending on the electives studied in previous / current semester / Research based / Industry Oriented
- Evaluation of the project work will be done by the committee appointed by the Director, Department of MCA. The student should submit a report on the minor project work carried out. The scheme for evaluation and phase wise distribution of activities of minor project is shown in Table 4.4 and Table 4.5 respectively.

Table 4.4 Scheme for Minor Project -CIE

Scheme for Minor Project Evaluation	
Continuous Internal Evaluation	
	Marks Awarded
Evaluation is based on different phases of project work (Break up is shown in table 4.5)	100
Total	100

Table 4.5 Phase Wise Distribution of Activities for Minor Project-CIE

Phase	Activity	Weightage
I	Synopsis submission, Preliminary seminar for the approval of selected topic and objectives formulation	10%
II	Mid-term seminar to review the progress of the work and documentation – <ul style="list-style-type: none"> • Design and simulation/ algorithm development/experimental set up • Conducting experiments / implementation / testing 	25% 25%
III	Oral presentation	10%
	Demonstration	20%
	Project report	10%

Scheme for Semester End Examination (SEE) – Minor Project

The evaluation will be done by two examiners for 100 marks. The following weightage would be given for the examination. Evaluation of the project work will be done individually.

- a. Project Work : 40% of max marks
- b. Presentation : 30% of max marks
- c. Viva Voce : 30% of max marks

IV. Major Project

- a. The candidate must take up individual project work in industry/ institution
- b. The project should be a real-time work for total of 5 months including project work and dissertation preparation and submission. Project work may be application oriented or research oriented.
- c. The candidate must maintain and submit weekly project work diary duly signed by the internal and external guide to verify the regularity of the student
- d. Seminars/Presentations should be given at all different phases of project completion
- e. Project verification at the place of project work is mandatory by the internal guide for the completion of the work.
- f. Students are encouraged and appreciated to show their project code demo along with their power point presentation during their SEE.
- g. Evaluation of the project work will be done by the committee appointed by the Director, Department of MCA. The candidate should submit the report on the major project work undertaken. The scheme for evaluation and phase wise distribution of activities of major project is shown in Table 4.6 and Table 4.7 respectively.
- h. In CIE, candidate must score 50% to take up SEE.

Table 4.6 Scheme for Major Project

Scheme for Major Project Evaluation	
Continuous Internal Evaluation	
	Marks Awarded
Evaluation is based on different phases of project work (Break up is shown in Table 4.7)	150
Total	150

Table 4.7 Phase Wise Distribution of Activities for Major Project – CIE

Phase	Activity	Weightage
I 5 th Week	Synopsis submission, Preliminary seminar for the approval of selected topic and objectives formulation	10%
II 10 th Week	Mid-term seminar to review the progress of the work and documentation – <ul style="list-style-type: none"> • SRS and algorithm development • Design and simulation / experimental set up 	40% 40%
III 15 th Week	<ul style="list-style-type: none"> • Conducting experiments/implementation /testing • Demonstration • Dissertation report 	20% 20% 20%

Scheme for Semester End Examination (SEE) – Major Project

The evaluation will be done by two examiners. The following weightage is given for the examination. Evaluation will be done individually based on

- | | | |
|---------------------------------------------------------------|---|-----|
| a. Relevance of the project | - | 25% |
| b. Project Standard w.r.t the Research / application oriented | - | 50% |
| c. Final Testing and Results with conclusions | - | 25% |
| d. Viva-voce | - | 50% |

Table 4.8 Scheme for Major Project – SEE

Continuous Internal Evaluation	Marks Awarded	Semester End Examination		
		Dissertation	Viva -voce	Total
Marks are evaluated during different phases of project work, presentation, submission of report	150			
Total	150	100	50	150

- The candidate should score a minimum of 50% in Dissertation to take Viva-voce Examination.
- The candidate shall submit a soft copy of the project work in the form of a CD in both Word and PDF format. Guides after checking the report for completeness as per the format and content, shall approve the report. The guide shall also choose and submit a panel of 3 external subject experts for evaluation of the dissertation.
- Plagiarism Check: Before approving the dissertation report, the guide shall ensure that the plagiarism check is done and obtain the certificate. The percentage of plagiarism must be < 20%. In case, the percentage of plagiarism is > 20% the guide shall reject the report and inform the candidate to make necessary corrections and resubmit the same.
- The format of the dissertation and the date of dissertation submission will be intimated by the department.
- The examiners shall independently evaluate the dissertation and submit the marks in the prescribed format to the controller of examination. The average of the marks awarded by the two examiners shall be the final.
- If the dissertation is rejected by the first external examiner the report shall be sent to a second examiner appointed by the panel. If the second examiner also does not approve the dissertation report, the candidate must carry out the project work once again and shall submit the dissertation report within 8 weeks, in such cases of rejection the candidate shall redo the entire submission of dissertation in softcopy.
- If the dissertation report is approved and evaluated by both the examiners and the candidate secures minimum passing marks in the evaluation the controller of examination shall inform both the examiners to conduct the viva-voce exam and to submit the viva-voce marks.

8. The internal examiner as per the direction of the CoE shall arrive at a convenient date to conduct the viva-voce examination of the candidate in consultation with the external examiner with information to the controller of examination.
9. The weightage for the evaluation of the project and the performance at the viva-voce shall be as per the scheme depicted in Table 4.8. The marks awarded by the examiners after the viva-voce examination shall be sent to controller of examination immediately in a sealed cover.

V. Seminar

- a. The student should give the seminar individually.
- b. The topic for seminar should be in one of the thrust areas relevant to industry or on-going research with in-depth technical review and analysis
- c. The student must be able to highlight or relate the technological developments with societal relevance and sustainability
- d. The students must mandatorily address professional computing practices relevant to the topic of study
- e. The student shall make an attempt to perform financial / cost analysis or apply project management tools as related to the topic of study
- f. Each student must submit both hard and soft copy of the presentation and report
- g. The assessment will be as per the rubrics specified for seminar and it will be evaluated for 50 marks
- h. There is SEE for this seminar

Scheme for Continuous Internal Evaluation for Seminar

Evaluation would be carried out in two phases. The internal assessment marks for the seminar shall be awarded by a panel comprising of a subject expert in the department, senior faculty and Director, MCA.

Rubrics for Evaluation

- | | |
|----------------------------------------------------------------------|-------|
| a. Topic – Technical relevance, sustainability and societal concerns | : 15% |
| b. Literature Survey | : 25% |
| c. Presentation Skills | : 35% |
| d. Report | : 25% |

Scheme for Semester End Examination for Seminar

Evaluation would be carried out by two examiners.

Rubrics for Evaluation

- | | |
|----------------------------------------------------------------------|-------|
| a. Topic – Technical relevance, sustainability and societal concerns | : 15% |
| b. Literature Survey | : 25% |
| c. Presentation Skills | : 35% |

d. Viva -Voce

: 25%

4.2 GRADING SYSTEM

Absolute Grading system on 10 point scale is followed in the evaluation of student's performance in a course.

- a) **Letter Grades:** Letter grade is basically a qualitative measure (an alphabet/letter) giving the performance of a student, such as, **Outstanding (S)**, **Excellent (A)**, **Very Good (B)**, **Good (C)**, **Average (D)** and **Fail (F)** based on the score. This is arrived at after the student's performance in a course, which includes **both CIE and SEE**.
- b) The range of marks for each letter grade shall be as given in Table 4.10

Table 4.10 Grading System

Level	Out Standing	Excellent	Good	Above Average	Average	Fail
Score (Marks) Range %	> = 90	> =80 < 90	> =70 < 80	> = 60 < 70	> = 50 < 60	< 50
Grade	S	A	B	C	D	F
Grade Points	10	9	8	7	6	0

- c) **Grade Points:** Depending on the letter grades assigned, a student earns certain grade points. In the 10 point grading system, that is followed, the grade points earned for different letter grades are given in **Table 4.10**
- d) Grade point averages SGPA and CGPA: The grade points earned for each course are used further for calculating semester grade point average (SGPA) and the cumulative grade point average (CGPA), both of which being important performance indices of the student.
- (i) **SGPA** (Semester Grade Point Average) is the performance index of a student in a semester and is calculated as follows. :

$$SGPA = \frac{[\sum (\text{Course Credits}) \times (\text{Grade Point/s}) \text{ for all the course registered by the student, excluding transitional grades, in that semester.}]}{[\sum (\text{Course Credits}) \text{ for all the courses registered by the student excluding transitional grades, in that semester.}]}$$

- (ii) **CGPA** (Cumulative Grade Point Average) is the performance index of a student of all the previous semesters and is calculated as follows:

$$CGPA = \frac{[\sum (\text{Course Credits}) \times (\text{Grade Point/s}) \text{ for all the courses registered by the student excluding F \& Transitional grades until that semester.}]}{[\sum (\text{Course Credits}) \text{ for all the courses registered by the student excluding those with F \& Transitional grades until that semester.}]}$$

The SGPA and CGPA respectively facilitate the declaration of academic performance of a student at the end of the semester and the end of successive semesters.

- e) **Transitional Grades:** The transitional grades, such as 'I', 'W' and 'X' shall be awarded to a student in the following cases.

These shall be converted into one or the other of the letter grades (**S-F**) after student completes his/ her course requirements, including examinations;

Grade 'I': Awarded to a student having satisfactory attendance at classes and meeting the passing standard at CIE in a course, but remained absent from SEE for valid and convincing reasons acceptable to the college, like

- (i) Severe illness or accidents, which disable him/her from attending SEE.
- (ii) A calamity in the family at the time of SEE, which required the student to be away from the college. (The candidate or the parents should inform the incident to the Chief Superintendent of the examination before commencement of the particular examination. The document related to the incident shall be submitted to the Controller of Examinations within a weeks' time after the incident)
- (iv) Any other exigency which the Grading Advisory Committee thinks requires a consideration, Like a student representing the institution / state / university / nation in university/state/national/international level events / competition. In such case, the student is required to take prior permission from Head of the institution with relevant documents. The candidates are required to submit the application, requesting for award the absence in I grade, before the particular examination, unless and otherwise the candidates absence is not considered for award of I Grade. The student should also submit the proof of having attended the event / competition immediately after returning, without which the transitional grade will not be considered.

Grade 'W': Awarded to a student having satisfactory attendance at classes, but withdrawing from that course before the prescribed date in a semester under faculty advice subject to maintaining the minimum requirement of 18 (eighteen) credits for the semester.

Grade 'X': Awarded to a student having attendance 85% and CIE rating ($\geq 90\%$) in a course, but SEE performance observed to be 'F', which could result in an overall F grade in the course.

- (f) **Earning Credit :** A Student would be considered to have completed a course successfully and earned the credits, if he/she secures a letter grade other than NSAR, NSSR, NE I, W, X or F in that course. Grade F in any course implies failure in that course.

4.3 PASSING STANDARDS

- a) The Standard of passing in each course is given in the following Table 4.11

Table 4.11 Passing standards

Courses	Cumulative Internal Evaluation	Semester End Examination	Combined CIE & SEE
Theory without Practice (100 Marks)	$\geq 50\%$	$\geq 40\%$	$\geq 50\%$
Theory with Practice (100 +50 Marks)	Theory $\geq 40\%$ Practice $\geq 50\%$ Total $\geq 50\%$	Theory $\geq 40\%$ Practice $\geq 50\%$ Total $\geq 50\%$	

b) Successive Failures

If a student fails (Grade F / Absent) to pass a course and earn the required credits prescribed for the course even after **five (5) attempts**, the admission of the student to the programme will be terminated and the student will be informed to leave the autonomous college. However, such a student may seek readmission to the programme at the college as a fresh candidate to the first year.

- c) **Absence from classes for more than six weeks at a time in a semester without leave of absence been granted by competent authority.**

d) **A regular student admitted to MCA programme shall complete the course within 6 years, from the year of admission. A student who is admitted directly to third semester under lateral entry scheme shall complete all the courses within a period of four academic years from the date of first admission in to the MCA Programme failing which he / she must discontinue the course.**

e) **Summer Semester:** The Summer semester is provided to facilitate or as a recourse to such students who have absented themselves from attending CIE or SEE without valid reasons;

OR

Who have been unsuccessful (Grade F) in attaining the minimum passing standards prescribed for SEE;

OR

Who have been detained for want of Sessional marks (CIE < 50%) and declared NSSR;

OR

Who have been detained for want of attendance (NSAR)

OR

Who have withdrawn (Grade W) from a course.

- ◆ Such students shall be required to re-register for the course(s) and go through CIE and SEE again and obtain a grade equal to or better than D in each case. The re-registration shall be possible when the particular course is offered again either in a Summer Semester or Main (odd/even semester for year back students only) semester.
- ◆ Course load will be specified for Summer Semester, for smooth operation of the programme. For this purpose, Director, Department of MCA, and four senior faculties (two Professors and two Assistant Professors) shall form a Committee, which will be notified by the institution. The students are expected to contact them for any assistance and clarification.
- ◆ A student can register for a maximum of four courses in the summer semester. However, the student cannot register for more than two courses having practice component and the total credits put together should not exceed 16.
- ◆ Students, who have applied for Revaluation or Makeup, can also register for summer semester; however, if they clear the courses in revaluation or makeup, the registration amount will be refunded.

f) Make-Up Examination:

A make-up examination facility is available to students who might have missed to attend the SEE of one or more course in a semester for valid reasons (4.2e) and given 'I' grade. Students having 'X' grade shall also be eligible to take advantage of this facility. The make-up examination would be held as per dates notified by the Controller of Examinations in consultation with Grading Advisory Committee and Board of Studies. In all these cases, the standard of the Make-up Examination shall be the same as that of the regular SEE for the Courses. There shall be no Make-Up examination for summer semester.

In case where the student fails to take make-up examination the actual grade obtained in the regular examination will be considered as the final grade in the course (i.e 'F' grade in case of 'X' grade and 'Ab' in case of 'I' grade).

4.4 SCHEDULE OF EXAMINATIONS

The Controller of Examinations will announce the Time Table for the SEE, Makeup and Summer. Various examinations in an academic year conducted in the order are:

1. SEE at the end of odd semester
2. Make-up examination after odd semester to students as per 4.3(e)
3. SEE at the end of even semester
4. Make-up examination after even semester to students as per 4.3(e)

5. Summer Semester at the end of even semester SEE.

4.5 VERTICAL PROGRESSION (PROMOTION TO NEXT ACADEMIC YEAR)

- (a) A student should not have more than **Four 'F' grades**; at the end of the academic year for promotions to the next higher academic year. Such students who do not satisfy this minimum requirement in an academic year shall improve by registering for the courses in which they have failed (Grade F) / Declared NSAR /Declared NSSR / withdrawn (Grade W) during summer semester under the guidance of Director, Department of MCA. The Director, Department of MCA may constitute an advisory committee for such registrations.
- (b) If a student fails to satisfy the minimum requirements, stated in 4.5(a), even after the Summer semester examinations, he/she cannot register for the next higher academic year. However, such students can register for the failed courses to a **maximum of 4 courses** to satisfy the minimum requirement for promotion to the next higher academic year. All the requirements specified in 3.3 and 3.5 will apply to these students.
- (c) Odd semester to even semester mobility does not depend upon the preceding odd semester examination results.

4.7 REVALUATION/PHOTOCOPY

The Controller of Examinations (CoE) will announce the schedule for revaluation / photocopy after the announcement of SEE results. **It will be the responsibility of the student to see the Notice Boards to avail this facility on time, failing which the student will not be eligible to avail this facility.**

The student can apply for revaluation of answer scripts and issue of photo copy of answer scripts after the announcement of results of the two main semesters. There is no revaluation process for practical's. There is no provision for photocopy for summer and make-up examination.

4.8 MALPRACTICE

A student who is booked under malpractice will be prevented from writing that particular examination from the instant he / she is booked for malpractice (**Possession of manuscripts / printed material; Possession and /or use of mobile phones or any other electronic gadgets, revealing identity, destroying evidence, impersonation, misbehavior, misconduct or any other malpractice related to examination**). The student shall be required to appear before the malpractice investigating committee for enquiry. The day, date and time will be specified by the Chief Superintendent / Controller of Examination. If found guilty, depending on the severity of the case, the committee will impose an appropriate punishment as per the Examination Regulations and Guidelines published from time to time. In such cases, the said course will be awarded with a credit of '0'(Zero) and grade NE for the calculation of SGPA.

4.9 REJECTION OF RESULTS

A student is permitted to reject the results of an entire semester (including CIE) only once during the programme duration. The student, who desires to reject the performance, shall reject performance in all the courses of the semester, irrespective of whether he / she has passed or failed in the courses. Such a student is allowed to take re-admission for the relevant semester after representation is submitted to the Principal in writing with the concurrence of the parent.

4.10 GRADE CARDS

Each student will be issued a grade card at the end of odd and even semester as well as summer semester examinations. This will have a list of all the courses registered by the student for the examination together with their credits, the letter grades and grade points awarded. Only those courses

registered for credit and having grade points shall be included for the computation of the student's performance like SGPA and CGPA.

4.11 PERCENTAGE EQUIVALENCE OF GRADE POINTS (on 10 POINT SCALE)

The Equivalence of CGPA with the percentage of marks to be considered for equivalence in the conventional system for students coming from VTU colleges to autonomous colleges is as follows:

- a. Conversion of CGPA into equivalent % of Marks = $[(CGPA) - 0.75] \times 10$
- b. Class designation $\geq 70\%$ (First Class with Distinction) $\geq 60\%$ and $< 70\%$ (First Class) $< 60\%$ (Second Class)

4.12 GRADUATION CEREMONY

(A) The college will have its own annual Graduation ceremony for the award of Provisional Degrees to students completing the prescribed academic requirements in each course of study, in consultation with the University, as per the provisions in the Statutes.

(B) Prizes, Medals and Ranks to the meritorious graduating students will also be issued during the graduation ceremony.

(C) Award of Class at Degree Level:

Master of Computer Applications Degree shall be awarded to the candidates who have passed all the stipulated courses from 1st to 6th semesters. Declaration of the class for the degree shall be based on the performance of the student from 1st to 6th Semester taken together for regular students and for lateral entry students from 3rd to 6th Semesters.

- i. A student will be declared to have obtained **First Class with Distinction as indicated in 4.11(b)** if the student has passed in all courses 1st to 6th semester and secured not less than **7.75 CGPA**.
- ii. A student will be declared to have obtained **First Class as indicated in 4.11(b)**. A student who has passed in all the courses of 1st to 6th Semesters securing not less than **CGPA 6.75 but less than CGPA 7.75** shall be declared to be eligible for the award of MCA Degree in **First Class**.
- iii. A student will be declared to have obtained **Second Class as indicated in 4.11(b)**. A student who has passed in all the courses of 1st to 6th semesters securing not less than **CGPA 6.00 but less than CGPA 6.75** shall be declared to be eligible for the award of MCA degree in **Second Class**.

(D) Award of Ranks

1. TEN Ranks shall be awarded in the MCA programme or 10% of the students appeared for examinations whichever is less. The rank shall be declared only for students based on aggregate CGPA obtained from 1st to 6th Semester in first attempt only.
2. Student appearing for Makeup / Summer Semester and any subsequent examinations in any credit or audit course / courses during the programme shall not be eligible for the award of ranks. The student who does not submit the dissertation report within the stipulated period are not eligible for consideration of rank.

3. Only students who complete the programme in three consecutive years for MCA (Regular), and two consecutive years for MCA (Lateral Entry) are eligible for the consideration of the award of ranks.
4. For the award of rank for MCA Regular students, CGPA shall be calculated from 1st to 6th semester and 3rd to 6th semester for lateral entry students.
5. The basis for declaring the rank shall be the CGPA in the descending order of merit from the highest CGPA and CGPA shall be calculated to the second decimal position.
6. Students with CGPA of ≥ 6.75 (Equivalent to First Class) or above are eligible for consideration for rank.
7. If two students get the same CGPA, the tie shall be resolved by considering the number of times a student has obtained higher SGPA, if it is not resolved even at this stage, the number of times the student has obtained higher grades sequentially from S to D till the tie is resolved. If the tie is still unresolved, the students with similar CGPA will be awarded the same rank.

5.0 VALUE ADDED COURSES & SERVICES

The institution will conduct proficiency courses from time to time depending on industry and skill requirements. A schedule of such courses shall be announced well in advance. Such courses shall be mandatory or otherwise depending on the importance of such courses. Separate certificates shall be awarded for such courses.

5.1 FINISHING SCHOOL

- a. A student after getting placed may be required to undergo special training as prescribed by the employers as per the calendar of events that shall be announced from time to time.
- b. A student who is not placed but wants to enhance his / her skills for employability can also opt for finishing school.
- c. The curricula, fees (if any) and the courses of finishing school shall be announced by the Department of Placement and Training from time to time.

5.2 PROFESSIONAL SOCIETIES

Every student is advised to become a member of at least one of the Professional Societies which are active in the institution. They are required to actively participate in the Professional Society activities which will enhance their overall skills, organizational capabilities and leadership qualities apart from opportunity to network with experts from industries and R&D organizations.

1. IEEE Student Branch with three societies
 - IEEE Communication Society

- IEEE Power & Energy Society
 - IEEE Computer Society
2. International Society of Automation (ISA)
 3. Computer Society of India (CSI)
 4. Information Systems Audit and Control Association (ISACA)
 5. Indian Institute of Chemical Engineers
 6. Indian Concrete Institute (ICI)
 7. American Society for Civil Engineers (ASCE)
 8. Indian Institution of Industrial Engineers
 9. Fluid Power Society of India (FPSI)
 10. Indian Society for Heating, Refrigeration and Air Conditioning Engineers (ISHRAE)
 11. Indian Society for Technical Education (ISTE)

5.3 SCHOLARSHIP FACILITY

Scholarships are available to students on merit cum means basis from the following organizations

Table 5.3 Scholarship facility

Sl.No	Category	Instituted by
1	SC/ST	SC/ST Scholarship
2	SC/ST	SC/ST Fee Concession (Free Ship)
3	Low income	KEA 2010 Subsidy
4	Low income	MHRD (PU Board) (DBT)
5	OBC	BCM (OBC) Scholarship
6	Minority	Karnataka Minorities Development Corp., Loan
7	Corporate	Cognizant Foundation (placement)
8	Corporate	Sitaram Jindal Scholarship
9	Corporate	NTT Data Inc Scholarship America
10	Others	BBMP MahanagaraPalike/ Town/City Municipal
11	Others	Merit Scholarship DTE Karnataka
12	Others	Merit-Cum-Means (DBT)
13	Others	Alumni Association RVCE
14	Others	Karnataka Employees Welfare Association
15	Others	Sarthaka Trust

5.4 LIBRARY & INFORMATION CENTRE

5.4.1 Networking & Digital Library Services:

Library is a consortia member of VTU through which the college has subscribed for IEEE / IEL, ASCE, Science Direct (Engg / Technology & Computer Science), Springer Link (E- Journals), Taylor and Francis, Proquest – Engineering and Technology, ABI Inform Global, Knimbus Digital library Platform, Remote Access Solution, Institutional Subscription - Karvin 24/7 E Books, E-Books of Cambridge University Press, Gartner Research Database. Library is also member of DELNET and is also making use of inter library loan facility provided by the DELNET for borrowing unavailable books, manuscripts and journal papers in the library.

Online access

IP enabled online access for e-books and journals have been provided for students and faculty throughout the campus.

5.4.2 Central Library:

Number of titles: 47140

Number of volumes: 137447

5.4.3 Policy for issue of Books and other library resources:

- Each student / staff is provided with a Smart identity Card. The student should keep their Smart identity card safely, to prevent misuse. In case of loss of identity card, duplicate will be issued on payment of penalty of Rs.1000/-.
- Four books and five books are issued for undergraduates and postgraduate students respectively
- Two additional Books are issued for SC/ST students
- Students are permitted to borrow CDs/ DVDs along with books
- Reference books are issued on demand for overnight use
- Books are issued for a period of two weeks, with one renewal for the next two weeks
- For late return of books, late fee of Rs.1.00 per day is collected
- Reservation policy is provided
- In case, a student leaves the institution on long leave / after completing the course he / she should obtain a “**No due Clearance**” from the library by returning all the books materials borrowed and pay other dues, If any pending.

5.4.4 Working Hours of Library

Monday to Friday: 09.00 am to 09.00 pm

Saturday: 09.00 am to 04:30 pm

Sunday: 09:00 am to 01.30 pm

5.4.5 Digital Library Facility

The internet and e- resources accessibility is available at digital library, is open to all students from 9AM to 5PM. The students are required to follow the instructions displayed at the library and digital library strictly in order to avoid withdrawal of these facilities for such students who violate any of the Rules.

5.4.6 Central Browsing Facility

The internet facility at browsing center is open to all students from 9AM to 5PM. The students are required to follow the instructions displayed at the library and browsing center strictly in order to avoid withdrawal of these facilities for such students who violate any of the Rules.

5.5 PLACEMENT & TRAINING

The Placement & Training Department is headed by the Dean (P & T). The main thrust of the Placement and training Department is in the following areas: Training the students in interview skills, personal grooming, etc. Arranging industrial visits and other related activities. In-plant training, facilitating campus interviews for graduating student by the

industries / summer placement and final placement for the students. Conducting Entrepreneurship development programme.

PLACEMENT PERFORMANCE

Table: 5.5 Placement Performances

Particulars	2014	2015	2016	2017
No. of offers made	1177	1200	1207	1143
No of Companies that visited RVCE	124	148	172	215

The Placement and training department conducts various **mandatory programme** to enhance the personality, communication skills and employability of students. The students who do not satisfactorily complete these trainings may be barred from attending placement drives.

5.6 TRANSPORTATION FACILITY

Route No	Name	Timings
RVCE 01	UDUPI GARDEN (BMTc)	
	Udupi Garden, Jayadeva Cardiology, RagiGudda, Jayanagar 9 th Block (Noor Store), S.G.H. Bus Stop, Coffee Day, Telephone Exchange, Bangalore High School, K.R.Road (Shastri Bakery), Indira Nursing Home, KIMS, D.G. Petrol Bunk, RVCE.	7.30 AM
RVCE 02	Brigade Millennium (NT)	
	RVDC, Brigade millennium, 15 th Cross, JP Nagar, Sarakki, Kadraeinahalli, Gowdanapalya, Chikkalasandra, RVCE	7.30 AM
RVCE 03	GIRL'S HOSTEL – 1 (RVCE)	
	RVCE Girl's Hostel ,Block-I, Krishna Gardens, RVCE.	7.50 AM
RVCE 04	GIRL'S HOSTEL – 2 (RVCE)	
	VenkatadriGirlsHostel,RVCE	8.00 AM
RVCE 05	NANDINI LAYOUT (NT)	
	Nandini layout, Srinivasa Temple, Rajajinagar 1 st Block, Hotel Gokul, Shankar Mutt, 8 th Main (Basaveshwaranagar), Havanur circle, Vijayanagar Bus Stand, BHEL Town Ship, RVCE.	7.30 AM
RVCE 06	MEKHRI CIRCLE (NT)	
	MekhriCircle,RajamahallGuttahalli, Sadashivanagar (Bhashyam Circle), 18 th Cross (Malleshwaram), K.C.General Hospital, HarishchandraGhat, Navarang, Power House, Dhobi Ghat , Vijayanagar Bus Stand, Bunt's Sangha, Chandra Layout, Nagarbhavi Circle, RVCE.	7.35 AM
RVCE 07	KORAMANGALA – INDIRANAGAR(NT)	
	Koramangala 4 th Block (BDA Complex) Sony world (after signal) Dell (Opp, Hyundai), Domlur (opp. KHT Motors), Indiranagar (Opp. Bata Show room, CMH Hospital Bus Stop, CMH Road KFC after signal, Metro Station) , Ulsoor Bus Stand, ACP office, KID'S Kemp (behind Kids Kemp after signal), Shoole Circle (Signal), Baldwin School, Richmond circle (under the flyover junction), Corporation, Town Hall, RVCE.	7.05 AM
RVCE 08	MAHADEVPURA (BMTc)	

Mahadevpura HDFC Bank (B. Narayanapura), EMC-2, Karthiknagar Bus stop, Marathalli, Kalamandir, JP Margan, Belandur Eco-Space, Akmey Harmony Apartments, Sarjapur/ Iblur Signal, Agara Signal, SBI Bank HSR Layout 24 th Main, HSR BDA Complex, Jnanai Tour& Travels/ FurnhillApratments, Central Silk Board, Jayadeva Signal, JD Mara Signal, Delmia Signal, Brigade Residency / ChikkalsandraShanimahatma Temple, Uttarahalli Circle, RR Nagar Arch, RVCE	6.50 AM
RVCE 09	STAFF – JAYANAGAR (NT)
RSST ,Ashoka Pillar, Madhavan Park, 4 th Block Jayanagar, 9 th Block South (East Circle), Vijaya Bank, (11 th Main), Himalaya Stores (18 th Main), Pump House (Carmel Convent Road), IX Block (East Circle), BPRI, Sevakshetra Hospital, (40 th Cross, 9 th Main) Junction, JSS School (38 th Cross), 19 th Cross, K.R Road, KIET, Shamanna Park (Nagasandra Circle), Ramakrishna Ashram, Canara Bank, Hanumantha Nagar, Bank Colony, Ring Road, RVCE.	7.50 AM
RVCE 10	STAFF – SHIVAJINAGAR (NT)
Shivajinagar (Ramda Hotel) , Shivananda stores, Nataraja Theatre, Malleshwaram Circle (K.G. Hospital), HarischandraGhat, MariyappanaPalya, Navarang Theatre, ESI, Rama Mandira, Prasanna Theatre, Vijayanagar Bus Stand, MaruthiMandira, BMTC Depot, Attiguppe, RVCE.	7.45 AM

5.7 HOSTEL FACILITIES:

1. There are four Gents Hostels on campus catering to over 1000 inmates.
2. There are three Ladies Hostels catering to over 350 inmates.
3. All the hostels in the campus are equipped with modern kitchen equipment and solar heating facility.
4. Hostels are provided with Internet & TV Room, Indoor Games facilities.
 - **Boarders are a part and parcel of the hostel blocks and mess Administration**
 - **Boarders who excel in academics are given awards**
 - **Boarders are encouraged to take part in NSS, NCC, Roctract, Raag and Sports activities.**

Name of the Hostel	Used by Boys	No. of Rooms	Total occupancy
Sir. M.Visveswaraya	Final Year and PG	254	254
Diamond Jubilee (DJ)	First year UG	83	249
Cauvery Annexe	First year UG	30	90
Golden Jubilee (First Floor + Part Second Floor)	Second Year UG	132	264
Golden Jubilee (Part Second Floor + Third Floor)	Third year UG	132	264
Golden Jubilee (Fourth Floor)	PG (M.Tech +MCA)	88	176

GIRLS Hostel			
Krishna Garden, RVCE Girls Hostel	BE Students	66	132
Hiranya Hostel, RVCE Girls Hostel	BE Students	34	90
Sri Venkatadri Nilaya, RVCE Girls Hostel	BE / M.Tech / MCA Students	66	140

6.0. EXTRA CURRICULAR ACTIVITIES

The Cultural Activities in the college are conducted under the umbrella of 'CAT (Cultural Activity Team). The CAT has the following wings and activities:

6.1 CULTURAL ACTIVITY TEAMS (CAT)

The following are the activities which are very popular:

- CARV:** Circle of Acting in RV, a club to promote talent in dramatics. Students actively participate in its activities and have won many laurels.
- Music Club:** The music club provides ample opportunities to the students to display their talents in classical, light and modern / western styles of music (both in vocal and instruments and in dance). **AALAP, FOOT PRINTS**
- Sanskriti (The Arts Club):** A club to promote fine arts and crafts.
- Frequency: Ham Club of the college provides opportunity to interested students to take up Ham activities.
- Kannada Sangha: It provides an opportunity to non-Karnataka students to get exposure to Karnataka's heritage and language, through Kannada programme.

6.2 National Service Scheme (NSS)

The NSS Unit of RVCE is very vibrant and organizes many activities to complement the needs of society. NSS- RVCE also educates various stake holders of the society, which not only helps the community, but also provides an opportunity for the students to understand the conditions prevalent in the community and inculcate leadership qualities. NSS-RVCE regularly organizes Voluntary Blood Donation Camp, Voluntary Eye Pledge Camp, Orphanage visit, Eye screening Camps, Programmes to promote National Integration and inculcate patriotism, Celebration of National Festivals and other events of national importance, Campaign regarding Drug abuse, Road Safety campaigns, Swachh Bharat initiatives etc.

6.3 National Cadet Corps (NCC):

NCC under 1 KAR Signal Regiment has been started during 2008. A maximum of 100 students are eligible to join NCC on a first cum first served basis. The selection process is monitored by NCC authorities. NCC classes / parades/ activities are organized during Saturday afternoons every week.

6.4 Sports Facilities

The college encourages sports activities by providing excellent infrastructure and coaching facilities. The RVCE Cricket, Basketball, Badminton, Table Tennis and Chess teams have won many trophies and Championships. The College provides facilities for outdoor and indoor games. It has a modern Multi-Gym facility. Sports Persons are honored by the Management. RVCE believes sports activities keep the young minds fresh and active.

6.5 Departmental Associations – MCA IT Forum

MCA Department has its technical association which provides a forum for technical knowledge assimilation, organizational capabilities and leadership.

6.6 RAAG

The youth club of RVCE conducts programmes inculcating social awareness among students. It also conducts skill development and literacy programmes.

6.7 ROTRACT Club

This club is sponsored by the Rotary club of Bangalore South: it conducts a number of socio cultural activities on and off the campus like blood donation camp, book and stationery distribution to needy, social awareness programmes etc.

6.10 WEST (Women Empowerment and Skill Training Programme)

Since 2006, the department of MCA is conducting WEST Programme for economically and socially deprived women with the following mission.

- a. To provide social justice and empowerment through enhancement of technical skills in the women of the weaker section of our society
- b. To impart the theoretical and practical aspects of basic knowledge of computers to enable these women to feel more confident in their work areas.
- c. To empower the women to be self-employed.
- d. To motivate them to be self-confident in their life.

The trainings are given in various areas of computer fundamentals, MS-Office, Tally, Adobe Photoshop, Fundamental Programming languages, PC/Network maintenance and Troubleshooting Programme, Internet Usage, sending and receiving emails, communication skills and hardware skills.

The WEST programme is sponsored by Karnataka State Women's Development Corporation, Government of Karnataka, three times, Rotary Club, Peenya, Bangalore, Cognizant Technology Solutions, Bangalore, DST, Delhi under TEDP and RSST, Bangalore regularly.

7.0 DISCIPLINARY MEASURES

7.1 General Discipline

- a) The students will not assist or even associate himself / herself in any activities which disturbs or is likely to disturb the peace and smooth working of the institution.
- b) The tuition fee shall be paid by the student before or at the time of admission / registration in every academic year.
- c) The student shall follow all the rules and regulations laid down by the college authorities/management from time to time.
- d) Students will have to maintain regular attendance. In case of attendance less than 75% the student will not be allowed for the ensuing CIE tests. Cumulatively he should have over 85% attendance as mentioned earlier, to be eligible for the semester end exams. In case of any absence, they should have to provide appropriate proof (medical certificate /letter from parent etc) and information, within three days of the absence to the department, the teacher concerned and the counselor.
- e) In case of planning to participate in any curricular (including paper presentation/competition), co-curricular and extra-curricular activities, prior permission has to be sought through proper channel. Further immediately within three days, on return from the event, should also provide the necessary proof to the counselor, the department, and the teacher concerned. Otherwise

they will not be considered for any attendance benefit and the certificate will not be considered for credits for the paper on Innovation and Social Skills.

RECOVERY OF LEGAL CHARGES AS APPLICABLE

The institution shall recover legal expenses incurred towards representing/defending such petition/suit before any court of law by making the Institution a party for their personal benefit (eg. Name change etc) and the parents /students shall abide by such reasonable condition and pay such amount which would be on actual.

7.2 ANTI RAGGING RULES

- As per the orders of the Supreme Court, Govt. of India, UGC, AICTE, Govt. of Karnataka, VTU, "Ragging" is a Criminal Offence leading to Non-Bailable Imprisonment. Students should not indulge in ragging or support ragging directly or indirectly in whatsoever manner. Severe action will be initiated against those indulging in ragging or supporting ragging.
- Ragging means causing, inducing, compelling or forcing a student, whether by way of a practical joke or otherwise, to do any act which detracts from human dignity or violates his/her person or exposes him/her to ridicule or to forbear from doing any lawful act, by intimidating, wrong fully confining or injuring him or by using criminal force on him / her or by holding out to him / her any threat of such intimidation, wrongful restraint, wrongful confinement, injury or the use of criminal force.
- Ragging Menace is a criminal offence and such of the students who involve in ragging will be rusticated from the college. Further, their University degree and conduct certificates will be embossed in BOLD letters with a statement that they indulged in ragging.
- Students indulging and/or encouraging ragging will not be eligible for placement services, hostel facility, air concession, railway concession, scholarships, passport/visa clearance etc.
- Photographs of students who have been involved in ragging shall be published in the notice board and also published in local newspapers.
- Enquiry committee's decision regarding the punishment is final.
- The offence of ragging is not only punishable under Section 116 of the Karnataka Education Act, 1983, but also under various provisions envisaged in Sections 109, 110, 111, 112, 113, 114, 115, 116, 302, 305, 306, 339, 340, 341, 342, 343, 344, 346, 347, 354, 359, 368, 448, 451 and 506 of the Indian Penal Code (IPC).

7.3.1 DRESS CODE

- a) Dress code is defined based on the need for safety, security, functionality and comfort.
- b) Students are required to wear decent outfits.
 - i. Girls are expected to wear Chudidars / Salwars and Kameez with sleeves. Jeans with decent tops with sleeves are allowed. No tight fitting clothing is permitted.
 - ii. Boys are expected to wear shirts and trousers. Jeans with decent t-shirts with collars are allowed.
 - iii. Displaying offensive and obscene slogans and icons on clothing is prohibited.
- c) Students who do not adhere to the dress code are liable to be rusticated from the institution.

7.4 Mobile Phone

- a) The **possession & use** of Mobile Phones by the students in the academic areas inside the campus is banned. However, for the convenience of the students the mobile lockers have been provided in every department. **The parents/ guardians are advised not to phone to the students from 9AM to 5PM. In case of emergency please contact respective HoD or Counselor.**
- b) If a student is found conversing on mobile or in possession of a mobile phone in any of the academic areas, the mobile will be confiscated and fine of Rs.5000/- will be levied for violating the rule.

7.5 SECURITY ISSUES

- a) Wearing of identity card in such a way that it is clearly visible, is a must inside the campus for security reasons. Entry in to the campus without valid Identity card is strictly prohibited. The faculty and the security personnel have the authority to check the ID cards
- b) Motorcyclists must remove their helmets before entering the College campus.
- c) College Security Staff have the right to ask individuals to identify themselves. Action shall be initiated against those persons who refuse to identify themselves.
- d) The students are advised to park their vehicle in the designated parking areas

7.6 SUPPORT SERVICES

- a) Photocopying Facilities
- b) Banking Facilities with ATM
- c) Post Office
- d) Stationery Stores
- e) Food Court (Two)
- f) Health Centre
- g) Pharmacy
- h) Meditation Centre

IMPORTANT NOTE:

In case of violation of College / Hostel norms & rules and regulations, a student may be prevented from continuing in that semester and / or appearing for the semester examination depending on the outcome of the Disciplinary Action Committee report. Ignorance of any rule does not condone any misbehavior.

Persons to be contacted in case of Emergency

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|--------------------------|---|---------------------------|
| 1. Principal | : | Dr. K.N.Subramanya |
| 2. Dean Academics | : | Dr. N.K.Srinath |
| 3. Dean Student Affairs | : | Dr. Shanmukha Nagaraj |
| 4. Warden (Boys Hostel) | : | Prof. P. Nagaraj |
| 5. Deputy Warden | : | Dr. A. H. Manjunath Reddy |
| 6. Director (MCA) | : | Dr. Andhe Dharani |
| 7. Warden (Girls Hostel) | : | Dr. Padmaja K |