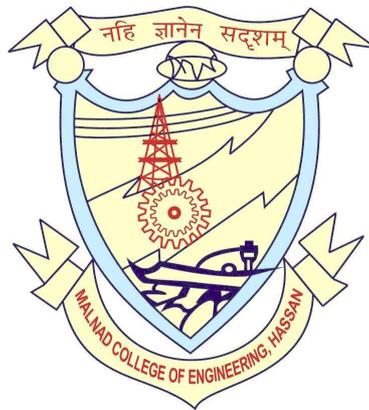# *INSTITUTIONAL STRATEGIC PLAN*

Malnad College of Engineering, Hassan

Submitted for fulfilment of Criteria 10.1.2. Availability of the Institutional Strategic Plan and its Effective implementation and monitoring

SAR-NBA

Executive summary

Malnad College of Engineering (MCE) is an Engineering college located in the city of Hassan, Karnataka state, India. It was established in 1960, during the second 5 year plan of India, as a joint venture between the Government of India, Government of Karnataka and the Malnad Technical Education Society, Hassan. The institution made its humble beginning with three basic branches of engineering, during the course of time with the technological developments the institution embraced nine branches of Engineering to its fold. Further, the institution added six PG programmes to its fold over the years. Since inception the college was affiliated to the University of Mysore but later got affiliated to Visvesvaraya Technological University, Belgaum. In 2007, the college was granted the status of an autonomous institution. The institutes 80% of the programs got accredited twice during 2003 and 2008. The institution is continuously striving hard to accommodate research activities in the campus along with quality engineering and technology education. The institution is also engaged in interaction with Industries, Educational Institutes, Research organizations and Universities both in India and abroad. To cite a few of them, Bosch Rexroth, Mercedes Benz India, NIT Suratkal Karnataka, IIT Mumbai, MCF- ISRO, North Dakota State University-USA. **The institution is a recognized center for world bank assistance under TEQIP in both phase-I and phase-II.**

The college received the ISTE Award as one of the best engineering colleges in the country, in 2007. The institution stands at 25th position in the assessment of government technical institute at national level by DATA QUEST during 2013-14 and position improved to 21 during 2014-15 and further moved upto 16th position in 2015-16.

The MCE Planning Model:

Institutions of higher education are driven to engage in strategic planning by a variety of critical forces, both external and internal, to their environments. The forces driving the MCE's 2017-2022 Strategic Plan for the Institution Malnad college of Engineering include, but are not limited to, the demand for higher education that is fuelled by the economic progress and high unemployment; changing demographics; and the need for a workforce that will enable this region of Karnataka and Karnataka state to maintain its competitive edge on the national stage encompassing Technology and Engineering.

The MCE 2017-2022 Strategic Plan is grounded in the following best practice principles:

1. Effective strategic planning requires identifying and implementing strategies that will move MCE to a better desired future as an educational institution on the southern-Malnad region in the state of Karnataka, nationally, and globally.

2. Strategic planning is not a "once-and-done" event. It is a continuous process involving planning, implementing, assessing outcomes and using results and lessons learned for further planning and revision and/or modification of strategies.

3. Measurement and/or assessment are key to strategic planning. Therefore, identifying key indicators for sub-goals and identifying responsible divisions/units will ensure effective monitoring and evaluation of outcomes.

4. The Institution should focus on a few but bold sub goals and strategies. Resources, including funds and time, are limited. Therefore, prioritizing of strategies and focusing on those that have the potential of being game changers are critical.

5. Since the execution of strategies is at the department or unit level, the strategic planning process has to be participatory to ensure shared vision, as well as shared ownership of and commitment to the plan by stakeholders throughout the Institution.

The strategic planning process uses methodical approach to engage in systematic and comprehensive assessment of the annual MCE strategic operational plan. Goals and sub-goals are carefully tracked; and reports are regularly disseminated to assist faculty, staff, and administrators in using data-driven decision making and to mapping progress.

The 2017-2022 Strategic Plan represents the collective effort of administrators, faculty, staff, students and community stakeholders. The process began when the Strategic planning Committee is identified in the institution. Strategic planning Committee aligned department/unit goals with the MCE goals and themes. Every member of Strategic planning Committee worked diligently to add sub-goals and strategies. The Strategic planning Committee built consensus on sub-goals and strategies, shared the first draft for feedback from stakeholders (e.g., faculty, staff, students, alumni and strategic partners) and prepared a final draft.

MCE Strategic Plan 2017–2022 identifies the following targets:

- *Develop, strengthen, and implement academic programs that are responsive to the MCEs mission and are systematically reviewed for sustained quality, relevance, and excellence to meet the challenges of a highly competitive and global workforce.*

- *Enhance institute infrastructure to accommodate increase in intake, research, economic development, technology development and transfer; contribute to an enhanced quality of life in the region; and facilitate sustainable domestic and international economic development and competitiveness.*

- *Promote and sustain a campus environment that supports a high quality of life and learning, that positively impacts retention through graduation and produces knowledgeable and culturally competent citizens able to lead effectively and compete globally.*

- *Improve academic interaction and participation of institutes / universities of national and international eminence in order to facilitate learning, innovation and research.*

- *Continuous and involved participation of MCF-ISRO in teaching learning process and research leading to joint mini and micro satellite mission with the participation faculty and students.*

About MCE

Malnad College of Engineering (MCE) is an Engineering college located in the city of Hassan, Karnataka state, India. It was established in 1960, during the second 5 year plan of India, as a joint venture between the Government of India, Government of Karnataka and the Malnad Technical Education Society, Hassan. The institution is affiliated to the Visvesvaraya Technological University, Belgaum.

The college is built on a campus of about 41.28 acres (180,000 m^2) and is a technical education center. The college received the ISTE Award as one of the best engineering colleges in the country, in 2007.

History

The Malnad Technical Education Society® came into existence during 1959-60 with the help of philanthropist and educationist of this malnad region. Late Hon. Shri Chandappa Patil, Indian Administrative Service (IAS) officer was the brain behind the setting up of Malnad Engineering College, Hassan. He was the Hassan District Commissioner then. The Coffee Planters around Hassan district, local farmers and many others contributed financially to make this college a reality. Mr Chandappa Patil, was a gentleman of humble origins. He was the first graduate from his village and had a vision to bring education to the masses in Karnataka, however remote the place was. This was his first venture among many more in establishing a good education system for the state of Karnataka.

The institution made its humble beginning with three basic branches of engineering viz. Civil, Mechanical and Electrical Engineering. During the course of time with the technological development the institution embraced nine branches of Engineering to its fold. Further, the institution added six PG programmes to its fold over the years. The college was affiliated to the University of Mysore but later got affiliated to Visvesvaraya Technological University, Belgaum. In 2007, the college was granted the status of an autonomous institution from UGC. The institution is continuously striving hard to accommodate research activities in the campus. As a result, all engineering branches have been identified as research centres under VTU. The institution is constantly striving hard to enhance its interaction with industry and research organisations. It has resulted in good number of MOUs. To cite a few of them, MCF, ISRO at Hassan, Bosch Rexroth and Benz. The institution is also engaged in interaction with Educational Institutes and Universities both in India and abroad. To cite a few of them, NIT Suratkal Karnataka, IIT Mumbai, North Dakota State University-USA.

The institution is recognized center for world bank assistance under TEQIP. The institution have received grant of Rs 7.80 Crores (2003-2008) in Phase-I and identified as one of the better performing institute. The institute have received grant of Rs. 12.5 Crores Phase-II(2009-2016). During TEQIP phase-II institute have organized more than 25 student centric skill development program and more than 40 Faculty Development Programs.

History of NBA connected to UG programs of MCE: The institution is making its continued effort to meet and improve the academic standards. In order to establish the same the institution applied for NBA accreditation for all eight eligible UG departments/programs during the year 2003. Out of eight programs **Civil engineering department** accredited for **Five years** and **remaining** branches of Engineering for **three years.** Further, during 2007-08 the institution applied for NBA accreditation for the **second time** to seven UG departments/programs except civil Engineering department along with Information science and engineering as **eighth**. Out of eight programs **seven programs** accredited for **Three years** and **remaining** one program not accredited which was applied for the first time.

Academic units and programs

MCE offers undergraduate Bachelor of Engineering (B.E) programmes in nine disciplines, namely:

- B.E in Automobile Engineering
- B.E in Civil Engineering
- B.E in Computer Science and Engineering
- B.E in Electrical and Electronics Engineering
- B.E in Electronics and Communication Engineering
- B.E in Industrial and Production Engineering
- B.E in Instrumentation Technology
- B.E in Information Science and Engineering
- B.E in Mechanical Engineering

There are postgraduate courses in six disciplines, namely:

- M.Tech in Digital Electronics and Communication Systems (DECS)
- M.Tech in Computer Applications in Industrial Drives (CAID)
- M.Tech in Computer Aided Design of Structures (CADS)
- M.Tech in Electrical Energy Systems (EES)
- M.Tech in Industrial Automation and Robotics (IAR) and
- MCA (Master of Computer Applications)

Salient features of the campus:

- A serene location with good academic ambience
- Individual Departments with well equipped Laboratories and Staff rooms
- Three Hostel Blocks for boys and one for Girls
- A well established and spacious Central Library
- A green campus with rain water harvesting and solar street lighting
- Wi-Fi campus with 100Mbps leased line
- Yoga and meditation centre
- De-mineralization Plant for Drinking Water

Library

The college has an exhaustive library with more than 93429 volumes and has a well furnished Reference section. The library subscribes to national and international journals in print and on-line versions in various fields of Science, Engineering and Technology. E-library facility is also provided to the fellow students for the access of online journals. In addition to this, each department has an In-house library.

Central Library- Resources

- Total collection of 93429 Volumes (including Book Banks) with 20364 Titles
- E-Learning materials through consortium and resources via CDs
- Encyclopedia, Handbooks, Dictionaries, Bound volumes of Periodicals, Student Project Reports
- Subscription to National print & IEEE, ASME and ASCE, ACM International on-line technical journals
- Internet Facility (15 systems)
- Reprographic Facility

Hostels

The college has a boys' hostel on the campus that accommodates 750 students. A girl's hostel located very close to the campus accommodates 220 students.

Sports

Malnad College of Engineering is the only Autonomous college to introduce sports as 2 credit course in the first year. College has most sports facility including swimming pool, wooden floor shuttle Badminton court and state of the art gym in addition to all the outdoor games. Students participation in university level and state/national level is exceedingly good and have won medals and appreciation.

Other facilities

The facilities in the campus include a branch of **Syndicate Bank**, a RO plant to supply drinking water, wi-fi facility to the entire campus and hostels, a cooperative society, a canteen, a meditation centre-DIVYA CHAITHANYA, an auditorium with a sitting capacity of 2000, a modern gymnasium and a swimming pool, language lab and browsing centre.

Student organizations

Technical clubs

- The Malnad Technical Club
- Science Association
- Society of Automotive Engineers India - MCE chapter

Cultural clubs

- The Literary Club
- Leo Club
- MCE Cultural Club (Abhivyakthi)
- SPICMACAY - MCE chapter

Service clubs

- Malnad Eco Club
- Rotaract Club

Annual events

- *Foundations* - A district level techno-fun festival organised by The Malnad Technical Club during odd semester.
- *Jamboree* - A cultural fest organized by the Leo Club during the odd semester.
- *Saviskaar* - A cultural fest organized by The Malnad Technical club during odd semester for first year students.
- *Malnad* - Annual college fest organized by the Literary Club during the even semester.
- *Enigma* - A state level technical fest by The Malnad Technical Club during the even semester. (www.malnadtechnicalclub.org)
- *Eternity* - Conducted by Malnad Eco club during the even semester.
- *Scientia* - A Science fest organised by The Science Association during even semester.

Other events

Reflections	*Katalyst*
Pinnacle	*Tussle*
Chiguru	*Gamedome*
Smart	

College Magazine: *Prakamya* (Biennial)

Notable alumni:

- Mr.Manu R Sale, 1995,E&C, CEO of Mercedes Benz.
- Mr M.D. Ranganath,1984,E&C,CFO of Infosys.
- Mr Charan Raj, 2005, Mechanical Engg., Music Director and Composer
- Mr Giri Devanur, 1991, Entrepreneur & CEO at Ameri100
- Mr Javagal Srinath,1986(admission),IT, Former Indian Cricketer
- Mr Sudhir Shivaram, 1993, Indian wildlife photographer and entrepreneur
- Dr.Udaya Parampalli, 1985, Associate Professor, University of Melbourne, Australia
- R.H. Muralidhara, 1983, Mechanical Director of Defence BEML
- Dr. Karisiddappa, 1982, Civil Engineering, Vice Chancellor, VTU, Belgaum
- Sathish Kumar S,1982, Mechanical Engg., Director CMTI-Bangalore.
- Dr. S V Sharma, 1985,E&C, Deputy Director-ISRO Bangalore.
- Dr. Subramanya Udupa, 1985,E&C, Deputy Director-ISRO Bangalore.
- Dr. K N B Mutrthy, 1980,E&E, Vice Chancellor PESU- Bangalore.
- Dr. Shankapal, 1982,E&E, Vice Chancellor MSRUAS- Bangalore
- Dr. Harly Moreeas,1976,Chairman, Fab Technologies International Ltd.
- Dr. Sundresh s Heragu,1982, Regecant Professor, Oklahama State university, U S A
- Mr. Dhananjaya Joshi,1986,COO of Bharti Infratech Ltd.

Team Members of Institutional Strategic plan committee

Chairman-ISP: Dr. K.S.Jayantha, **Principal**

Members: Dr. M S Raviprakasha, **Vice-principal**

Dr. V.N.Narayana, Dean(AA), Department of Electronics and Instrumentation Engg.

Dr. H.S. Mohana, Former Dean(AA), Department of Electronics and Instrumentation Engg.

Dr. H.N.Suresh, Former HOD, Department of Electrical and Electronics

Dr. M.K. Partha, HOD, Department of Mathematics.

Dr. M.K.Ravishankar, NBA-Coordinator, HOD, Department of Automobile Engg.

Dr. G. Shivakumar, NBA-Coordinator, HOD, Department of Electronics and Instrumentation Engg.

Mr. S.B. Devaraj, Associate professor, Department of Civil Engg.

Mr. Lakshmana Naik, Associate professor, Department of Mechanical Engg.

Mr. Murthy Mahadeva Naik, Associate professor, Department of Electronics and Communication Engg.

Mr. C. Muneer Pasha, Associate professor, Department of Automobile Engg.

Mr. B.N. Prasanna Kumar, Associate professor, Department of I & P Engg.

Mrs. Hannabel H. Alva, Assistant Professor, Department of Information Science and Engg.

Environmental Scan

Technical Education Scenario:

Worldwide and Nationwide

Technical education in India contributes a major share to the overall education system and plays a vital role in the social and economic development of our nation. In India, technical education is imparted at various levels such as degree, diploma, PG and research in specialized fields catering to the various aspects in technological development and economic progress. The intake capacity of institutions offering technical education has increased manifold over the years. To maintain high quality and for proper planning and coordinated development of the technical education system in the country, Government of India has established a statutory body called All India Council for Technical Education (AICTE) during 1987. The AICTE aims at regulation and maintenance of norms and standards in the technical education system. Worldwide scenario of technical education varies naturally according to economic strength, educational heritage, civilization and sometimes local demands of the particular country. Developed countries have more of a liberalized pattern of technical education, while African and Asia-Pacific countries still tend to follow a centralized system. The Indian Government after independence started premiere institutes of Higher learning, the IITs along with the existing institutions. This followed by the starting of NITs and Government Engineering colleges. India has the tradition of private participation in Education. This resulted in good number of Engineering and technology Institutes spread over the country. In India the National Board of Accreditation was established just before the dawn of 21st century in line with ABET and other world level accreditation bodies. This has made a phenomenal change in the quality and approach of technical education all over the world, as a result the Outcome Based Education Evolved. During 2013-14 government of India signed the Washington accord which resulted in global acceptance of Engineering graduates from accredited institutions.

The union government is giving impetuous to the manpower development with global competence to capture global requirement. In the budget significant money has been provided to Higher education, and other initiatives such as Skill India, Start up India, Make in India and Stand up India.

Engineering and Technical Education in Karnataka state and region:

The Karnataka state is one of the major contributors to the Engineering and technical education at national and international level with significant participation from both state Government and private sector. At present the state has more than 200 Engineering colleges. Earlier technical institutions were under different Universities. During1998 the Visvesvaraya Technological University came into existence and as its outcome engineering institutions are now under one Umbrella. The last two decades have witnessed phenomenal growth in Engineering education in Karnataka region. During 1960 MCE was the only institute to cater to Engineering education in the neighbouring four districts. At present more than 20 institutions along with one NIT in this region, among which 4 institutions are located in Hassan. A recent development is that a good number of colleges are enjoying autonomous status and becoming private universities.

The state government is giving impetuous to manpower development with global competence by creating conducive environment for engineering and technical education. This has resulted in Bangalore earning the name silicon valley of India. The MNCs from all over the globe have their production and research activity in the state. This has been percolated to

this region also. In the past decade Hassan has become an educational hub encompassing four Engineering institutes, HIMS, BVSc and Agricultural University. This contributed to the growth in associated education like MBA, MCA and Diploma. Earlier Hassan and other districts in the Malnad region were known for agricultural and allied industrial activity. In the last decade Hassan region has been identified as SEZ. This resulted in necessary infrastructure and funding. Recent survey shows establishment of significant number of textile, granite, IT and agricultural related Industries.

Background Information and situation analysis:

Malnad College of Engineering (MCE) is an Engineering college located in the city of Hassan, Karnataka state, India. It was established in 1960, during the second 5 year plan of India, as a joint venture between the Government of India, Government of Karnataka and the Malnad Technical Education Society, Hassan. The college received the ISTE Award as one of the best engineering colleges in the country, in 2007. The institute has taken good positions in the state and national raking assessments by different agencies.

A key premise is that MCE should foster a range of abilities, some of which extend beyond formal classroom work. For example, students at MCE should learn:
- to understand the values and beliefs of multiple cultures
- to embrace moral and ethical values
- to participate in community and civic affairs and engage with social problems
- to use knowledge in their own lives and pursue lifelong learning
- to develop leadership and teamwork skills
- to care for themselves and manage physical and emotional needs responsibly

These abilities have direct relevance to many of the changes in the world noted above, and thus it is reasonable to infer that MCE students need preparation in these skills for successful lives, professionally and personally. This makes outside-of-the-classroom educational experiences increasingly important to the development of such abilities. MCE,s tradition for public service or engagement and international scope provides many relevant opportunities.

To conceptualize learning outcomes in more comprehensive terms, the Institution has developed a set of core competencies, distinguishing academic and personal abilities, as follows:

Academic Competencies

- disciplinary knowledge
- critical thinking
- communication skills
- scientific and quantitative reasoning
- self-directed learning
- information literacy
- engagement in the process of discovery or creation

Personal Competencies

- multicultural competence
- moral and ethical awareness
- self-management
- community engagement

Staff -Strength - Teaching Faculty:

In order to instil the above competencies in students the institution is fostering good number of qualified and resourceful faculty since inception with very high retention rate. As on date there are 175 teaching faculty which includes 32professors, 49 associate professors and remaining in the assistant professor cadre. There are 44 Ph.d in the diversified field of specialization and others with ME/M.Tech/M.Sc Engg. qualification.

The institution is not falling behind in nurturing Technical & Supporting Staff. There are 80 Administrative Staff, 19 Library Staff, 108 Laboratories/ Workshops and 07 staff looking after sports activities.

MOUs with Industries / R&D Organizations:

The institution since its inception encourages the faculty to work with Industries and R&D Organizations, as a result the following are the sample MOUs.

- INSAT Master Control Facility, Hassan for PG Teaching and project guidance, Library facilities for students of Electronics & Communication Engineering.
- EMC^2 Corporation for faculty training for the subjects like SAN and support to students for certification.
- MSME – Ministry of Micro Small, Medium Enterprise Development Institute, Government of India for Business Skill Development.
- BOSCH REXROTH for training on automation in pneumatics, hydraulics and PLCs.
- JVS Electronics Pvt. Ltd., Bangalore, for student and faculty development programs.
- BSNL, Bangalore for faculty training in subjects related to new technologies introduced in BSNL and support to students for internship & projects.
- Eagle Photonics, Bangalore – Carrying out research and industry oriented training/teaching.
- HCL Technologies, Bangalore to provide industrial training for the students and also for recruitment of students.
- ProSIM R&D Pvt. Ltd., Bangalore to provide faculty training and for joint research projects
- MOU with Philips

Expression of Interest signed between MCE & NITK for the establishment of virtual lab

MOU with Mercedes Benz

MOU with Philips For Solar street lighting

MCE-MCF/ISRO Relationship:

The Master Control Facility an wing of Indian Space Research Organisation is located at a distance of just six Kilometres from our campus. The vicinity of ours only engineering institute then, during **eightie**s brought these two premiere organisations to work closely for the cause of education and space research. During 1988-89 the department of Electronics and communication commenced an PG programme in Digital Electronics and satellite communication which was first of its kind. MCF- MCE have established an MOU to support each other's academic and research activities. The Director MCF Dr. S. Rangarajan and few scientists from MCF got involved in teaching learning process of PG programme. This legacy continued during Dr M Y S Prasad and DR. C G Patil when they became directors of MCF. Present Director Dr. S Parameswaran is extending best co-operation in the capacity of Academic council member. The institution takes pride in mentioning the following names of the scientists who took pivotal role in Mars Orbit Mission (MOM).

Sl.No.	Name	Batch
1.	Mr. Shridhar. C. D.	1975
2.	Mr. Nagaraj H N	1983
3.	Mr. Subramanya Udupa	1984
4.	Dr. Sharma S V	1985
5.	Mr. Ananda	1997
6.	Mr. Raghunandan	2000

Further, the contribution of MCE alumni in CHANDRAYAN and Mission of world record number (104) of placing satellites in to orbit is significant. This legacy of walking together in the direction of progress is continuing. The UG and/or PG students of MCE are undertaking project work at MCF-Hassan on regular basis which are supervised jointly.

Research activities:

Although the institution primary goal is to impart the syllabi content to the UG students, the faculty has showcased good research acumen. The total number of Publications in Journals/Conferences is 673 (as on date), out of that **201** is published in **Referred Journals**. Further, one **Patent application** has been filed by one of the faculty. In the last decade the number of registration for Ph.D program in various department is constantly increasing. As on date there are 50 candidates registered for Ph.D and 27 candidates for M. Sc. (Engg.). Till date the institution has produced 19 Ph. D. and 17 M.Sc. (Engg.).

Achievements since getting Autonomy:

The institution has continued to display greater responsibility and higher commitment to all the stakeholders after becoming autonomous. The institution takes pride in mentioning some of its achievements since getting Academic Autonomy.

- Exclusive 5 credit course for Communication skills and soft skills
- Dedicated 2 credit course for sports
- Introduction of Mini projects and project based learning
- Academic recognition for internship and training in industries awarding **credits**
- Flexibility in framing syllabus
- Allowing participation of students in curriculum design as **student member** in the Board of Studies (BOS).
- Timely announcement of results
- Reintroduction of Engineering Graphics through manual drafting
- Encouragement for Best projects across the departments
- Handbooks with recent information given to all the students
- Gold medals for branch toppers
- Adopting Good Governance practices
- Involvement of Alumni in designing curriculum, instituting scholarship/awards and mentoring projects for students.
- Many national level MOUs and MOU with NDSU, USA and IUCEE
- Addition of Electives like Design of Masonry structures, Geometric dimensioning and Tolerances, Intelligent systems for engineering applications, FPGA designs, AI based instrumentation , Engine management system, Design for Manufacturing & Rapid prototyping, Storage Area Networks, etc
- Involvement of Industry experts in teaching
- Addition of necessary infrastructure to accommodate autonomy and its governance, such as Additional lecture Halls, state of the art laboratory Equipments, Auditorium with 2000 sitting capacity, Dyana Mandir-yoga center etc.

SWOT ANALYSIS

Strengths
- Highly qualified, experienced faculty & staff
- A 55 year old institution with least attrition rate
- Large Global Alumni base
- Government Aided departments (4 nos.)
- TEQIP funded Institution
- Autonomous since 2007
- One of the few colleges preferred by GOI quota from North Eastern students

Weaknesses
- Not fully unaided or fully aided and hence the governance structure is complex.
- Recruitment for vacant posts by DTE/ Govt. has stalled almost since 20 years, except for backlog posts, in aided departments, due to Govt.-Laid-down-policies.
- Not so cosmetic infrastructure facilities: since the Institution is 55 years old
- Located geographically away from metropolitan cities
- Absence of related industry around Hassan

Opportunities
- Getting funded projects at State/Central level
- Good ambience for R&D with 43 faculty having Ph.D
- Growing up to the level of setting Administrative and Financial Autonomy

Threats
- Many new Institutions in and around with attractive physical infrastructure facility.
- Being a institution located in a rural area, the quality of students at entry level is poor.
- Realisation of Quality faculty structure is very tough, especially with aided departments recruitment policies of the DTE/ Govt.
- Financial implication with existing fee structure against sixth AICTE scale implementation

Gaps..

- Intensive attempts to be made to reach the community and society- Absence definite programs for MCE-out reach.
- Specific plans to be devised to improve the financial capability of the Institution to meet the future challenges and technological growth.
- Continued effort in exploring the Autonomous status and its flexibilities to the maximum extent.
- Industry Institute Interaction is limited to MOUs and visits. Intensive programmes to derive the benefits to be done.
- Lagging in Collaborative research with other institution and industries.
- Not successful in getting good number of Grants and Funds for research projects although Number of proposals submitted are sufficient.
- MCF-ISRO relationship with the institution needs strengthening although good number of MCE alumni are taking leading role in MCE-ISRO activities.
- Enough scope is still exists to improvements ambiance in the campus.
- Need to encourage collaborative projects and interdisciplinary electives .
- Need to encourage strengthen the student activities in order to understand the problem of the community and region and make attempts to find the solution.
- Exposure to different culture and Foreign languages to be explored.
- Lack of flexible stay hours both for students and faculty to improve the overall stay hours in the campus.
- Institution is having just adequate infrastructure for the present intake. Immediate additional space availability is limited
- The MOU with NDSU have not been explored and benefits have not reached the faculty and students.
- Need to strengthen the faculty and student exchange programmes with other reputed institutes of world class.
- Need to strengthen the effort to attract better students from different region of the state and outside.
- Strengthening the quality of technical staff to improve participation and contributing to research work of the institution.
- Services of adjunct faculty have not been explored by the institution to the extent of creating impact in teaching learning process.
- Services of superannuated pro-active, competent and updated faculty / staff to be explored by the institution in order to support teaching learning process/administration.
- Lack of specific plans to retain the UG/PG students demonstrating research capabilities.

Vision of the Institute

To be an institute of excellence in engineering education and research, producing socially responsible professionals

Mission of the Institute

1. Create conducive environment for learning and research

2. Establish industry and academia collaborations

3. Ensure professional and ethical values in all institutional endeavors.

Motto: *Nahi Jnanena Sadrusham* (**Meaning:** Nothing is equal to Knowledge)
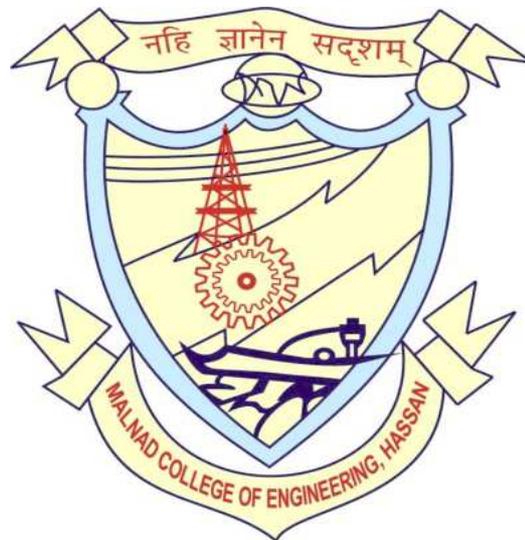
MCE Core Values

The Core values for which MCE continues to adhere to its purpose by

• Providing high quality undergraduate and graduate programs that will equip students with 21st century knowledge and skills necessary for the challenges of India and the world

• Affirming its role as the State's 1960 grant-in-aid institution by providing citizens with opportunities and access that will enhance their lives and enable them to develop intellectually, economically, socially, and culturally

• Demonstrating shared-governance and responsibility through recognition of the viewpoints that various members of the university community contribute to the institution

• Appreciating diversity in its student body, faculty, staff and administration through civility, commitment to tolerance, freedom of expression, and celebration of other cultures

• Adhering to the highest standards of honesty, fairness, trust and integrity in both personal and professional behaviour

• Promoting student centeredness as the heart of the educational enterprise; and

•Focusing on character development through learning and leadership experiences.

Major Goals-Strategic Plan

This strategic plan of MCE emphasizes the importance of educationally rich national, international and public engagement experiences under the supervision of faculty. This emphasis involves a focus on what are stated under "personal competencies" above, but it also implies that personal competencies should be addressed in the context of academic work that enhances academic competencies. Thus, the plan gives special emphasis to those educational activities that interconnect academic and personal competencies.

Broad Strategic Directions

Following are four strategic themes that identify broad directions for responding to the challenges in MCE's changing external and internal environment. These themes are manifest in several objectives and actions proposed in subsequent sections of this plan:

- *Focus*
- *Adaptability*
- *Coordination*
- *Efficiency*

To be more focused, it is necessary to make difficult choices about which academic areas or units to emphasize and which to de-emphasize; what to keep and strengthen; what to downsize or eliminate.

To be more adaptable, MCE's administrative arrangements and structures need to be more flexible, to be evaluated and changed on a continual basis, and to have fluidity so that they do not become set in stone.

To introduce more coordination, the institution needs more permeable boundaries and connectivity across academic fields, disciplines, programs, and colleges, so that both students and faculty can cross these boundaries or transcend them when opportunities to enhance academic excellence emerge and also to ensure that the institution uses its intellectual resources efficiently and effectively.

To be more efficient, MCE needs to examine administrative structures and policies carefully, with an eye toward creating a tighter fit between our methods of accomplishing tasks and the institution's goals and aspirations.

Greater focus and connectivity are essential to preserve and enhance academic excellence, whereas greater adaptability and efficiency are especially critical to the stewardship of resources. Implementation of these broad directions would need to respect and affirm the longstanding principles of collegiality and shared governance.

MCEs Strategic Goal I: Develop, strengthen, and implement academic programs that are responsive to the MCEs mission and are systematically reviewed for sustained quality, relevance, and excellence to meet the challenges of a highly competitive and global workforce.

Sub-Goal 1: **Promote and support college readiness and retention to graduation.**

Strategy I: Develop and implement a plan for institution engagement in local schools/colleges that focuses on career education for SSLC/PUC/12th/Diploma with parent involvement.

Strategy II: Establish a "Kids Tech garden" (academic enrichment program) to build a aspirants of MCE pipeline to postsecondary education.

Strategy III: Develop and implement a comprehensive institutional academic enhancement program for incoming students to improve their academic skills and success in college.

Sub-Goal 2: Expand the capacity to offer unique and/or critical undergraduate, post-graduate, and professional academic programs that address national and regional workforce needs.

Strategy I: Conduct a needs assessment/feasibility study to identify new critical academic programs and modify curriculum to the changing world.

Strategy II: Identify and implement skill development programs in advanced technological domain both for students and faculty.

Strategy III: Increase the number of adjunct faculty from Industry, Management and Research organization.

Strategy IV: Services of superannuated pro-active, competent and updated faculty /staff will be explored by the institution in order to support teaching learning process/administration.

Strategy IV: Promote and increase the students and faculty participation to acquire certificates by taking on line courses on recent advances in technology, like MOOC, NOODLE and NPTL etc.

Sub-Goal 3: **Promote and support institution readiness to adopt present and Future technological development.**

Strategy I: Acquire and install state-of-the-art equipment and technology for teaching, testing, consultancy and research.

Strategy II :Involve faculty and students in research that leads to innovation. Continue steps to establish innovation and patent cell. incubation centre and/or technology park for the region.

Strategy III :Provide professional training in grant writing and program implementation.

Strategy IV :Encourage departments to seek new ways of increasing resources continuously.

Strategy V: Establish incubation centre and/or technology park for the region.

MCEs Strategic Goal II: Enhance institute infrastructure to accommodate increase in intake, research, economic development, technology development and transfer; contribute to an enhanced quality of life in the region; and facilitate sustainable domestic and international economic development and competitiveness.

Sub-Goal 1: Enhance the infrastructure and facility in tune with changing technological needs

Strategy I: Construction of Multi storied Lecture Hall Complex with all state of the art facilities.

Strategy II: Construction of Multi storied Central Facility Complex with all state of the art facilities.

Strategy III: Enhance the captive power facility by deploying Solar panels on all the buildings and become self reliant.

Strategy IV: Enhance the internet connection bandwidth and Wi-fi to support the 4G and future communication technologies.

Sub-Goal 2:Enhance interdisciplinary research opportunities to impact the quality of life for the region.

Strategy I:Develop programs that will prepare faculty and students to address environmental problems in the region and State.

Strategy II: Seek and/or strengthen on-campus collaborative grant opportunities. Use the skills and knowledge of faculty, staff and students to work in collaboration with communities to improve the quality of life for the region through outreach activities.

Sub-Goal 3:Increase revenue opportunities for faculty and students.

Strategy I : Continue to institute scholarship funds for both students and faculty, and support other opportunities that provide incentives and promote productivity in research and other scholarly work.

Strategy II: Establish specialty training centres that are funded through state and union government contracts (e.g., computer education, e-commerce, traffic control and skill India)

Strategy III: Introduce entrepreneurship concepts across the curriculum and establish an Entrepreneurship Centre to engage the institute and community.

MCEs Strategic Goal III: Promote and sustain a campus environment that supports a high quality of life and learning, that positively impacts retention through graduation and produces knowledgeable and culturally competent citizens able to lead effectively and compete globally.

Sub-Goal 1 :**Upgrade teaching-learning process to create impact**.

Strategy I: Continue implementation of course redesign initiatives and evaluate them for impact and "best practices."

Strategy II: Infuse more research and creative activities in courses to improve learning experiences of undergraduate students.

Strategy III: Increase funding to support current and future transformational initiatives and encourage more faculty participation.

Strategy IV: Starting of online courses offered at the institution.

Sub-Goal 2 :**Upgrade instructional technology services.**

Strategy I: Improve technical support and faculty training for classroom instruction and student engagement.

Strategy II: Provide more SMART classrooms.

Strategy III: Increase staffing for information technology, instructional technology and classroom technology to ensure adequate support levels for faculty, staff and students.

Sub-Goal 3: Increase student retention to impact successful completion of graduation within the prescribed period of four years.

Strategy I: Develop an implementation plan that improves student support and advising services, enhances students' level of satisfaction, and results in higher retention and graduation rates.

Strategy II: Appoint a Institution-wide retention committee which include parents to develop, implement, and assess changes to positively impact retention and increase four year graduation rates.

Strategy III: Provide additional scholarships for need-based students. (academic and economic basis)

Strategy IV: Increase resources and continue to provide a summer bridge program in math and science for incoming/lateral entry students.

Strategy V:Identify reasons why students leave after their 1st and 2nd year and factors that lead to poor academic performance; plan appropriate programs to address the problems.

Strategy VI: Conduct analyses to identify variables (e.g., CGPA, SGPA, etc.) that show what makes incoming students need to be successful.

Sub-Goal 4: Improve the teaching/learning environment.

Strategy I: Reduce faculty teaching loads.

Strategy II: Reduce faculty/student ratios to meet the national average.

Strategy III :Establish a mentoring program for new and untenured faculty.

Strategy IV: Hire additional faculty in critical needs areas, especially general education.

Strategy V: Promote a culture of civic engagement by implementing service learning as a component of the academic experience tied to the curriculum and university outreach efforts.

Strategy VI: Increase financial support for students, faculty, and staff who present research papers pertaining to the regional issues.

Strategy VII: Establishment of a career oriented centre to train the students for participation in IAS / IPS / IES / IRS / IFS/GATE courses. Helping some teachers to get trained on these issues.

Sub goal 5: Improve the quality of campus life

Strategy I: Regular conduction of cultural programs involving ethnic communities - celebration of major national festivals

Strategy II: Motivating students to become members of college clubs and professional societies and to actively participate(2 credit- mandatory).

Strategy III: Improve and augment hostel, sports and recreation facility.

Strategy IV: Improve the campus ambiance through proper illumination. beautification and maintaining greenery.

MCEs Strategic Goal IV: Improve academic interaction and participation of institutes / universities of national and international eminence in order to facilitate learning, innovation and research.

Sub-Goal 1: Enhance MOU with premier Indian Technological Institutes and foreign universities.

Strategy I: Develop an interactive cell in the Institution to interact with authorities of different Indian Technological Institutes foreign universities and venture establishing MOU with them.

Strategy II: Connect with the Universities with whom already MOU is established, to seek greater/improved avenues of collaboration.

Strategy III: Contact other Deemed Universities to study and explore the possible avenues of collaboration with respect to the facilities established by them.

Sub-Goal 2: Promote interactive collaboration with neighbouring, well performing TEQIP funded reputed Engineering colleges.

Strategy I: Contact Institution of repute which are performing well, to interact and look for opportunities of academic expertise exchange.

Strategy II: Seek a higher degree of cooperation for facilitating a meaningful, creative innovation.

Strategy III: Contact other Engineering colleges to work together in selected domains for research to be sponsored by either or both or other funding agencies.

Sub-Goal 3: Establishing a hub of Institutional academic expertise-MCE out reach.

Strategy I: Creating a database of institutional academic expertise.

Strategy II: Canvassing the academic exchange programs offer possible.

Strategy III: Share 'Study materials' or 'Project guidance service' at a reasonable cost.

Sub-Goal 4: Creating an Engineering consultancy centre, catering the technical consultancy need of other Institutes.

Strategy I: Establishing a team of skilled engineers and technical staff in various domains of Engineering consultancy.

Strategy II: Marketing the services that can be rendered.

Strategy III: Bringing creativity in the nature of services.

Sub-Goal 5: Actively involving EDUSAT based e-learning programs of Visvesvaraya Technological University.

Strategy I: Getting connected with e-learning centre of VTU.

Strategy II: Developing web based e-learning contents of the specifically identified courses.

Strategy III: Promoting the culture of active involvement in e-teaching programs, amongst the faculty members.

Sub-Goal 6: Enhance student and faculty capabilities to work with world class Institution/universities.

Strategy I: Enabling students and faculty to learn German, French and Japanese language. Further, elevating it as mandatory credit course for UG students.

Strategy II: Encourage student and faculty exchange programs adopting the institution for immersion, dual degree and collaborative research

Strategy III: Promoting the culture of active involvement of faculty and students in arranging and/or participating international conferences/workshops.

MCEs Strategic Goal V: Continuous and involved participation of MCF-ISRO in teaching learning process and research leading to joint mini and micro satellite mission with the participation faculty and students.

Sub-Goal 1. Involvement of people in the field of Aerospace Engg. in the curriculum activities of the Institute.

Strategy I : Inclusion of MCF-HSN/ISRO-BNGLR, HAL, NAL and ADA scientists in Academic Council and BOS of E&C, Mech., CSE and ISE Depts.

Strategy II: Identifying and involving the alumni who are in the field of Aerospace Engg., Avionics & Space Engg. in curriculum activities of PG programmes of Mech., E&C & Civil Dept.

Sub-Goal 2: Creation of knowledge about Aerospace/Aerodynamic/Avionics/Space Engg. in the Institute.

Strategy I :Introduction of new courses like Design of Aerospace structures in the curriculum of Mech. and Civil PG programmes and Avionics in the curriculum of E&C PG programme.

Strategy II :Introduction of new courses like Space Vehicle Instrumentation in the curriculum of E&I programmes and in the curriculum of E&C PG programme.

Strategy III :Deputing faculty from all branches of engineering and sciences for short term and long term training programmes in the design and execution of Aerospace structures to premier Institutes like IITs.

Sub-Goal 3: Development of Centre Aerospace Engg. in the Institute.

Strategy I :Introduction of new courses like Design of Aerospace structures in the curriculum of Mech. and Civil PG programmes and Avionics in the curriculum of E&C PG programme.

Strategy I :Starting of UG programme in Aerospace Engg.

Strategy II :Appointment of Adjunct faculty from ISRO-BNGLR, HAL, NAL and ADA for Mech. and E&C PG programmes.

Strategy III :Entering MOU with MCF/ISRO, HAL, NALand ADA in developing existing laboratories of E&C and Mech. Depts.

Sub-Goal 4: Development of Centre for Satellite Mission in the Institute.
Strategy I :Identifying the team of faculty and UG/PG students through qualifying aptitude test who are interested in the field of design, fabrication & execution of Aerospace structures/Space structures and entrusting them the responsibility of Mini/Micro satellite mission(MALNAD SAT) with adequate infrastructure and financial support.

Strategy II :Setting up of new lab in Aerospace Engg.
Strategy IIi :Encouraging UG/PG students of Mech. and E&C stream for the design and fabrication of micro satellites which will cater the need and necessity of locality.

Review Progress – Balanced Scorecard

MCEs Strategic Goal I: Develop, strengthen, and implement academic programs that are responsive to the MCEs mission and are systematically reviewed for sustained quality, relevance, and excellence to meet the challenges of a highly competitive and global workforce.			
Sub-Goal 1:	**Strategy**	Action plans	Time line
Promote and support college readiness and retention to graduation.	I	Design programmes to invite. Visit institutions and Showcase MCE	Regular basis During ensuing admissions-2017
	II	Establish a "Kids Tech garden"	2018-19
	III	Identify groups Arrange and design 40Hrs Bridge course	2017 2017-18
Sub-Goal 2:	**Strategy**	**Action plans**	**Time line**
Expand the capacity to offer unique and/or critical undergraduate, post-graduate, and professional academic programs that address national and regional workforce needs.	I	Aerospace Engineering, Agri-tech and Engineering. Updating syllabi	2018-2021 Continuous
	II	Arranging skill development programmes in all the relevant field.	2017-18
	III	Minimum of one adjunct faculty in all engineering departments	2017-18
	IV	Establish a eco-system to identify, and retaining the suitable	2017-Six months
	V	Identifying the suitable ongoing programs and create awareness	2017-Six months

Sub-Goal 3:	Strategy	Action plans	Time line
Promote and support institution readiness to adopt present and Future technological development.	I	Budget allocation. Identify task force to recognise the needs and to prioritize the procurement	2017 2017-18
	II	Establish Project Lab Establish innovation and patent cell and incubation centre	2018-19 2019-20
	III	Identify groups and arrange training to write effective proposals	2017-18
	IV	Identify groups and arrange meetings with industries to explore collaboration	2017-18

MCEs Strategic Goal II: Enhance institute infrastructure to accommodate increase in intake, research, economic development, technology development and transfer; contribute to an enhanced quality of life in the region; and facilitate sustainable domestic and international economic development and competitiveness.

Sub-Goal 1:	Strategy	Action plans	Time line
Enhance the infrastructure and facility in tune with changing technological needs	I II	Construction of Lecture Hall complex Central Facility Complex	2017-19 2018-19
	III	Harness Solar Power	2017-19
	IV	Enhance BW by 100 MBPS -K-net	2017-18

Sub-Goal 2:	Strategy	Action plans	Time line
Enhance interdisciplinary research opportunities to impact the quality of life for the region.	I	Arrange sustainable design and development programmes with resource persons from IISc Bangalore. Include in syllabus	2017-18 2018-19 Continuous
	II	Arranging different community meet in the campus and at site.	2018-19

Sub-Goal 3:	Strategy	Action plans	Time line
Increase revenue opportunities for faculty and students.	I	Augment the Scholarship funds with the help of Management, Alumni, Public, and Industry	2017-19
	II	Identify specific group to take it forward	2017-18
	III	Introduction of exclusive course Entrepreneurship Centre to engage the institute and community.	2017-18 2021-22

MCEs Strategic Goal III: Promote and sustain a campus environment that supports a high quality of life and learning, that positively impacts retention through graduation and produces knowledgeable and culturally competent citizens able to lead effectively and compete globally.

Sub-Goal 1:	Strategy	Action plans	Time line
Upgrade teaching-learning process to create impact.	I	Faculty training	2017-19
		Reward for novelty and best practices in teaching learning	2018-19
	II	Increase in Project Based learning components	2017-19
	III	Create fund to encourage innovation to product	2019-21
	IV	Offering On-line courses and certification courses	2018-20
Sub-Goal 2:	**Strategy**	**Action plans**	**Time line**
Upgrade instructional technology services..	I	Arrange training in using modern tools in teaching learning.	2017-18
		Recruit experts	2018-19
	II	SMART classrooms.	2018-19
	III	Arrange training in maintaining modern tools	2018-19
Sub-Goal 3:	**Strategy**	**Action plans**	**Time line**
Increase student retention to impact successful completion of graduation within the prescribed period of four years.	I	Identify specific group of faculty and senior students to advice/mentoring. Bring Psychologist in the process	2017-19
	II	Arrange retention committee meeting with students and parents periodically	2017-18
	III	Identify public contribution to help the student on the basis of needs	2017-18
	IV	Arrange bridge programmes	2017-18
	V,VI	Perspective result analysis	2018-19
Sub-Goal 4:	**Strategy**	**Action plans**	**Time line**
Improve the teaching/learning environment.	I,II	Use services of Adjunct faculty	2018-19
	III	Engage senior and Adjunct faculty for Mentoring	2017-18 continuous
	IV	Identify critical area and appoint	2017-18
	V	Community service through clubs as Credit course	2017-18
	VI	Budget allocation	2018-19
	VII	Establish carrier guidance cell	2017-18
Sub-Goal 5:	**Strategy**	**Action plans**	**Time line**
Improve the quality of campus life	I	Identify, fund and arrange different cultural fests through clubs	continuous
	II	Allocat1/2 credits for Professional society activities	2018-19
	III	Budget allocation and implement: completing stadium as per the plan	2017-22
	IV	On top priority-Management and voluntary services	2017-18

MCEs Strategic Goal IV: Improve academic interaction and participation of institutes / universities of national and international eminence in order to facilitate learning, innovation and research.

Sub-Goal 1:	Strategy	Action plans	Time line
Enhance MOU with premier Indian Technological Institutes and foreign universities. .	I	Identify task force group and fix targets	2017-19
	II	Identify task force group, encourage connected people to visit both the campus, sort out the mutual interests. and to work with fixed targets.	2018-21
	III	Identify possible avenues of collaboration	2019-21
		Create facility such as net meet, video conference, live beaming	2018-20
Sub-Goal 2:	**Strategy**	**Action plans**	**Time line**
Promote interactive collaboration with neighbouring, well performing TEQIP funded reputed Engineering colleges.	I	Drive faculty exchange programmes Drive student immersion programmes	2017-18 2018-19
	II	Work together for innovation and development of products	2018-20
	III	Arrange training and help the students of neighbour institutes to work for their projects	2018-19
Sub-Goal 3:	**Strategy**	**Action plans**	**Time line**
Establishing a hub of Institutional academic expertise-MCE out reach. .	I,II	Identify and Creating a database of institutional academic expertise. Publish and explore collaboration	2017-18 2018-19
	II	Arrange retention committee meeting with students and parents periodically	2017-18
	III	Create portal to share the study material	2017-18

Sub-Goal 4:	Strategy	Action plans	Time line
Creating an Engineering consultancy centre, catering the technical consultancy need of other Institutes.	I,II	Identify task force group, encourage people to visit the campus, sort out the mutual interests and to work with cooperation	2018-19
	III	Identify critical service areas and bring novelty	2017-18 continuous

Sub-Goal 5:	Strategy	Action plans	Time line
Actively involving EDUSAT based e-learning programs of Visvesvaraya Technological University.	I	Arrange a meeting of all the Faculty who have already contributed to the cause of e-learning and prepare team	2017-18
	II	Develop web based e-learning contents for the most sought courses	2018-19
	III	Create help desk for e-learning and teaching	2019-20

MCEs Strategic Goal V: Continuous and involved participation of MCF-ISRO in teaching learning process and research leading to joint mini and micro satellite mission with the participation faculty and students.

Sub-Goal 1:	Strategy	Action plans	Time line
Involvement of people in the field of Aerospace Engg. in the curriculum activities of the Institute.	I	Act swiftly to Identify people and accommodate in various academic committees	2017-19
	II	Act swiftly to Identify alumnus of MCE in aerospace domain and accommodate in various academic committees.	2018-21

Sub-Goal 2:	Strategy	Action plans	Time line
Creation of knowledge about Aerospace/Aerodynamic/Avionics/Space Engg. in the Institute. .	I,II	Introduce and teach relevant courses in the domain in all programmes	2017-19
	III	Faculty training and development in the domain knowledge.	2018-20

Sub-Goal 3:	Strategy	Action plans	Time line
Development of Centre Aerospace Engg. in the Institute. Strategy I :Starting of UG programme in Aerospace Engg. . .	I	Introduction of new courses like Design of Aerospace structures in the curriculum of Mech. and Civil PG programmes and Avionics in the curriculum of E&C PG programme.	2017-18 2018-19
	II	Appointment of Adjunct faculty from ISRO-BNGLR, HAL, NAL and ADA	2020-21
	III	Entering MOU with MCF/ISRO, HAL, NAL and ADA in sharing existing laboratories	2019-21
Sub-Goal 4:	Strategy	Action plans	Time line
Development of Centre for Satellite Mission in the Institute.	I	Identify task force group of faculty and students with aptitude test. Award academic and financial incentives Conceive and propagate the idea of student satellite programme	2018-19 2018-19 2020-21
	II	Setting up of new laboratory in Aerospace Engg.	2019-20 continuous
	III	Promote design and fabrication of micro satellites which will cater the need and necessity of locality.	2021-2022