MRU-STRATEGIC PLAN JAN 2020 TO 2030 (2004-2014-2020-2030)

ENGINEERING THE FUTURE OF YOUTH

MANAV RACHNA UNIVERSITY

MANAV RACHNA vidyantariksha

FORMERLY MANAV RACHNA COLLEGE OF ENGINEERING
NAAC ACCREDITED 'A' GRADE INSTITUTION

Declared as State Private University under section 2f of the UGC Act, 1956

Our
Visionary
Leaders

Dr. Prashant Bhalla
Chancellor Manav Rachna University

Dr. Amit Bhalla
Vice President Manav Rachna University

Prof. (Dr.) Sanjay Srivastava
Former Vice Chancellor (2015 to 2018)

Prof. (Dr.) I. K. Bhat
Vice Chancellor (2019 onwards)

A brief about the University

- MRU is a leading State Private University (established vide Haryana State Legislature Act No 26 of 2014 & under Section 2(f) of UGC Act 1956), and recognized by UGC, offering globally relevant education.

- The University has evolved from Manav Rachna College of Engineering (MRCE), which was established in the year 2004, a NAAC accredited 'A' Grade institution (2011-2016).

- The accreditations/rankings are testimonial to the trust of accrediting bodies in the quality of education being offered, a well-established teaching and learning process guided by the global best practices and a culture of academic excellence promoting research, innovation & entrepreneurship.

- University has 5 faculties & 9 departments which provide higher education in the area of Engineering, Management & Commerce, Law, Education & Humanities and Sciences.

Approvals by Regulatory Bodies

- All the engineering programs offered under the Faculty of Engineering, MRU are approved by the AICTE vide letter no. F. No. North-West/1-4262293227/2019/EOA dated 10.04.2019.

- All the integrated law programs offered by Faculty of Law are approved by the BCI vide letter No. BCI: D:799/2017 (LE/Std.27/28.05.2017) dated 23.06.2017.

- The integrated B. Ed. Programs (4 years) and B.Ed. Program (2 years) offered by Faculty of Education are approved by NCTE vide letter No. F.No. NRC/NRCAPP-10195/256th/Meeting/2016/156767 dated 29.08.2016 and letter No. F. No. NRC/NRCAPP-10196/257th/ Meeting/2016/159545 dated 04.10.2016.

- MRU is Member of the Association of Indian Universities (AIU).

Accreditations, Rankings and Collaborations

- AICTE-Ministry of Innovation Cell- MRU Institute Innovation Council was ranked 4 Stars consecutively in 2019 and 2020.

- QS I-Gauge Gold Rating-MRU has been bestowed with QS I-Gauge overall Gold rating. MRU has been awarded Diamond rating in facilities and student employability. Modeled after QS Stars International, QS I-Gauge provides a unique 360 degree perspective to Indian Institutions.

- Times Engineering Survey-Manav Rachna University is among the Top 3 emerging Engineering Institutes of the country as per Times Engineering Institutes Survey 2019. It is also the second most promising and emerging institute for Placement and Research Capability.

- NBA Accreditation-The National Board of Accreditation (NBA) had accredited MRCE (now MRU) for its B.Tech.-Computer Science Engineering, Electronics & Communication Engineering and Mechanical Engineering in 2013 for 2 year.

- NAAC Accreditation-The National Assessment and Accreditation Council (NAAC) had accredited MRCE (now MRU) for a period of five years with a CGPA of 3.10 on a four point scale at A Grade, valid from 16.09.2011.

- Nodal Centre for Virtual Labs-Manav Rachna University is declared as Nodal Centre for Virtual Labs, in association with IIT, Delhi.

- MRU has collaborations with the leading Universities and Institutions both at National and International level for delivering the best education to its students. It has signed MOU with many industries for establishing Centre of Excellence and as Academic partner in the area of various programmes and courses for delivery which include Xebia, Altair, Design Tech, Diakin, Quick Heal, True Chip, NCCBM, IIT Delhi, Lahti University of Applied Sciences, Finland, Carlton University, Canada, Osh University, Kyrgystanare to name the few important academic and industry partners of MRU and the list is extensive.

Institutional Profile

ACTIVITY	NO.
Established in	2004 as MRCE 2014 as MRU
Departments	9
Students (On Roll)	1666
UG	14
PG	7
Academic Departments	Department of Computer Science & Technology Department of Electronics Engineering Department of Mechanical Engineering Department of Physics Department of Chemistry Department of Mathematics Department of Education Department of Law Department of Management & Commerce
UG Programs	
Faculty of Engineering (FoE)	B. Tech. Computer Science & Engineering B. Tech. Electronics & Computer Engineering B. Tech. Mechanical Engineering
Faculty of Applied Sciences (FAS)	B.Sc. (Hons.) Chemistry B.Sc. (Hons.) Mathematics B.Sc. (Hons.) Physics
Faculty of Management & Commerce (FMC)	BBA with Specialisation in: • Health Care Management supported by leading hospitals of Delhi & NCR • Finance & Accounts • Entrepreneurship & Family Business • Operations Management with specialization in Supply Chain Management, Logistics & Projects Management
Faculty of Education (FoEdu)	B.Ed. B.Ed. Special Education (Learning Disability) B.A. B.Ed. Integrated B.Sc. B.Ed. Integrated
Faculty of Law (FoL)	B.A. LLB (Hons.) BBA LLB (Hons.) B.Com. LLB (Hons)
PG Programmes	
Faculty of Engineering (FoE)	M. Tech. Computer Engineering M. Tech. Electronics & Communication Engineering with specialization in Embedded System & VLSI M. Tech Mechanical Engineering
Faculty of Applied Sciences (FAS)	M.Sc. Chemistry M.Sc. Mathematics M.Sc. Physics
Faculty of Law (FoL)	LLM LLM (Part Time)

Institutional Major Achievements

Achievements	Nos.
Research Publications (Databases like Scopus/WOS)	1202 (293)
University h- Index	23
IPR Filed/Published/Granted to faculty (INDIA/USPTO)	25 + 5 + 8 = 38
Start-ups Graduated/Mentored by faculty member of other University students	2 + 2 = 4
Start-ups ongoing/Mentoring by faculty member for other University students	2 +1 = 3
Start-ups got funding from New Gen IEDC-MR	7
Prizes Won/finalist (Microsoft Imagine Cup and Yahoo Accenture Innovation Jockey)	AY 2015/2019
AICTE-Smart India Hackethon-2019 and 2020 Prize won by our two teams under software category	2 (2019 & 2020)
Our team ranked in top 10 teams in Singapore-India Hackathon-2019	2019
Institute Innovation Council (IIC) established in support of Ministry of Innovation Cell (MIC) of MHRD-AICTE (Star rating for IIC 1.0 and IIC 2.0)	4 Stars amongst top 150 Universities

Elements of MRU Strategic Plan

- Preamble, Vision and Mission

- Core Values and Strategic Goals and Objectives for achieving the Vision

- Metric for measuring effectiveness

- Updating and living by the plan

- Results of SWOT Analysis

Vision and Mission of University

Preamble

For more than 15 years, the institute has successfully fulfilled its primary mission: to provide and holistic education to students in the frontier areas by imbibing research culture for producing socially responsible human resource.

Vision

To educate students in frontier areas of knowledge enabling them to take up challenges as ethical and responsible global citizens

Mission

- To impart outcome based holistic education
- To disseminate education in frontier areas
- To produce globally competitive, ethical and socially responsible human resources
- To produce human resources sensitive to issues of Environment and Sustainable Development
- To develop Environment and Sustainable development as a thrust area of research and development.

Core Values and Strategic Objectives for Setting Goals

Core Values

The University is guided by a set of Core Values, which enable it to achieve its Vision and Mission. The Core Values of the University are:

Excellence, in teaching, learning, research and service.

Innovation, through new research directions, programs and partnerships.

Creativity, in exploring new ways to add to the body of knowledge through new findings.

Collaborative and Experiential Learning, by sharing knowledge across traditional boundaries.

Entrepreneurship, through emphasis on collaborative and interdisciplinary study.

Ethical Conduct, by instilling a value system in students.

Social Responsibility, dedicated to serving individuals, society and nation through outreach and community engagement;

Diversity and Inclusion, by respecting all individuals regardless of class, caste, religion, ability and gender.

Global Citizenship, by inculcating meaningful knowledge, skills and Global values leading to identification with the world community.

Strategic Objectives

A. To promote innovation in curriculum design and delivery and have Outcome-oriented Learning Culture.

B. To promote Research Environment and Management Practices.

C. To continuously enhance the quality of faculty and their contribution.

D. To provide Resources and Infrastructure for achieving Academic Excellence.

Strategic Goals

The objectives of the strategic goals are being achieved in a multi-pronged approach. The action plan to achieve are listed under each goal, and caters to more than one goal simultaneously.

Strategic goals to promote Innovation and Entrepreneurship activities will help in creating a startup ecosystem in the campus.

A. To facilitate, enhance & promote innovation and Entrepreneurship in curriculum design and delivery and have Outcome-oriented Learning Culture

Continue to enhance and promote innovation and Entrepreneurship in curriculum design and delivery and have outcome-oriented learning culture to improve knowledge and skills of students for better employability, socially productive and make them empowered citizens of tomorrow.

Expected outcomes of innovation and Entrepreneurship in curriculum design and delivery and have Outcome-oriented Learning Culture are

- To promote innovation and Entrepreneurship related courses in the existing programmes.
- To start new Programme and Courses in Creativity and Design.
- To implement policies of Credits mapping / transfer against Innovations and Start ups activities.
- To promote Prototype development based on Industry oriented problems.
- To create a platform to nurture the ideas of students as Tinkering and
- Fabrication Centre for the promotion of startup activities in the campus.

B. To implement Student-Centered Educational Experience

Provide a student-centered educational experience that attracts diverse, high-quality students, enables them to realize their potential, inspires them to pursue excellence at all levels and grooming them to become leaders in their profession.

Expected outcomes of implementing the Student-Centered Educational Experience are

- Gain recognition as an outstanding Top 100 institutes in the country.
- Increase student enrollment at the undergraduate, masters and doctoral levels.

- Increase the undergraduate student retention and graduation rate.
- Increase the number of graduates having an undergraduate research experience.
- Increase the diversity of the engineering student body.
- Produce graduates that are aggressively recruited by industry, academia, and professional programs.

C. To promote Research, Innovation Environment and Management Practices

- The University aims to grow beyond domain-specific research and knowledge generation.
- To create a interdisciplinary research and innovation environment
- To have a positive impact on Academic Reputation, Employer Reputation and Attractiveness for Faculty and Students and
- To have relevance to Government, Industry and Society.

This will enable, enhance and recognize scholarship, while stimulating innovation, entrepreneurship and economic development within our state, nation and world.

Expected Outcomes of Implementing an Enabling Research and Innovation Environment are

- To increase h-index of the university and
- Gain recognition as an outstanding top 50 universities/engineering educational institution for Research and Innovations.
- Increase number of Research & Innovation Cluster/Advanced labs
- To establish Centers of Excellence in the thrust areas of research in consonance with government's IMPRINT Scheme and collaborate with Industry partners and Support Technology Transfer
- To increase the number of our PhD students.
- To increase the number of undergraduate students engaged in research.
- To increase the number of peer-reviewed publications.
- To increase the number of proposals submitted to Funding agencies
- To increase the annual research support funding from nationally and international competitive research sponsors.
- To increase the number of undergraduates entering our graduate program, MS/M.Tech. students pursuing PhD studies, and PhD graduates entering academia, research institutions and industry.

D. To enhance the quality of Faculty and their contribution.

Implementing the Vision as it Relates to Faculty

- Recruit Mentor and Retain high-quality faculty members who value and promote world-class holistic education, work in the frontier areas and are committed to new knowledge generation for producing socially responsible human resource.
- MRU shall continue to encourage faculty and students to publish in referred and reputed journals.

Expected outcomes of implementing the Vision as it Relates to Faculty are

- Continue to offer enhanced faculty startup packages competitive with top research institutions.
- Improve faculty salaries in all ranks, and make them competitive with peer institutions.
- Develop a mentoring system for new faculty that will facilitate their development in research and teaching, and reward mentors for their contribution.
- Continue the use of endowed professorships and chairs to reward excellence in research, teaching, and service.

E. To enhance collaborative research through National and International tie-ups

- Continue to enhance collaborative efforts at both individual and University level in partnership with Government and Private organization of national and international repute.

Expected Outcomes of collaborative research through National and International tie-ups are

- To increase collaborations for enhancing outcome in terms of publications and patents.
- To increase outreach through faculty and students exchange.
- To promote internships for enhancing employability of students.
- To increase the annual research support funding by submitting joint proposals from nationally and international competitive research sponsors.

F. To provide Resources and Infrastructure for Academic Excellence

Continue to provide resources as per technology demand and professional development for faculty to leverage technology to enhance student learning environments.

Expected Outcomes of implementation of providing Resources and Infrastructure for Academic Excellence are

- Creation of Centre of Excellence, Clusters and Advanced labs in the emerging areas
- Develop new programs that support Faculty and Students at all levels.
- Provide internships through experiential learning
- Strengthen resources and support structures for faculty research, creative and innovative activity
- To have modern equipment and technology in all Academic and Research programmes.

G. To promote integration of technologies in various teaching pedagogies

- Continue to promote integration of technologies in various teaching pedagogies

Expected outcomes to promote integration of technologies in various teaching pedagogies are

To continue in promoting online delivery of specialized courses by integrating technologies which will increase

- Visual impact and audience focus
- Provide annotations and highlights
- Analyzing and synthesizing complexities
- Enriching curriculum with interdisciplinary approach
- Increasing spontaneity and interactivity
- To promote flipped classroom learning.
- To use hybrid classroom learning during pandemic situations
- To promote faculty trainings in future ready technologies using digital transformations.

H. To implement the Service and Economic Development Outreach Plan Outcomes

- Enhance the impact of the Institute both within and outside the university through service and outreach

Expected outcomes of Implementation of Outreach, Economic Development, and Service Plan are

- Further enhance the diversity of faculty, staff and student populations (try to be global in character).
- Development of national research centers and enhances our current infrastructure to support socially and nationally multi-disciplinary collaborative research.
- Develop an effective training program to bring more internationally renowned scholars to the campus.
- Create a flexible technology transfer program that encourages faculty risk taking.

I. Encourage faculty to participate in faculty governance and service to the University.

- Communication with the larger technology community through an annual Technology and Innovation Conference

- Develop Memoranda of Agreement between key industries to leverage resources and opportunities for enhancing prosperity for students.

- Service-based lifelong learning

- Encourage and reward faculty for Research and Innovation, patents and start-ups etc.

- Encourage collaboration between faculty and industry to solve complex problems and provide innovation-based solutions.

- Encourage faculty and staff to seek positions of leadership in their professional societies to broaden the influence of the University.

Expected Outcomes of engagement with Stakeholders are:

- Encourage faculty to participate in faculty governance and service to the University.

- Strengthening the engagements with industry, Government and society through multiple-way for exchange of knowledge and ideas.

- To deepen its engagement with stakeholders in multiple ways like
  - Engagement with Industry
  - Expansion of Start-Up Opportunities
  - Development of Centres of Excellences
  - Industry Research Sponsorship
  - Engagement with the Government initiatives
  - Engagement with Society,
  - Engagement with Alumni etc.

J. Implementation to build Long-term Self Sustainability Systems

- Outcomes of above goals will build a long term self sustaining system.

- Strengthening more academic flexibility besides developing programmes that lead to achieving long-term sustainability.

- University shall work for getting more grants from outside funding agencies.

- Encourage alumni, corporate houses, individuals and social organizations to build endowments for financial sustainability.

- Encourage to facilitate the students learning by providing scholarships, besides government and multinational corporations to support meritorious/needy students.

The University assesses its weaknesses and challenges through SWOT analysis and Academic Audit
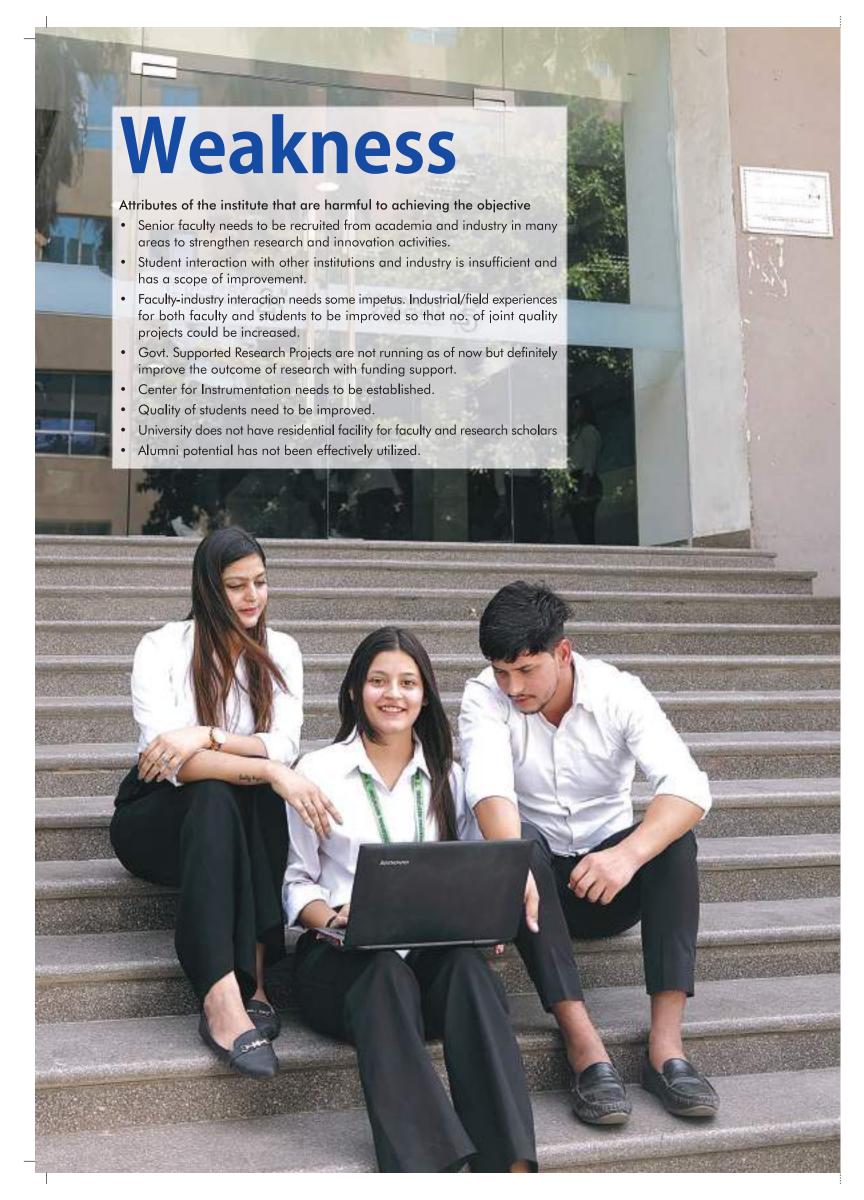
Strengths

Attributes of the institute that are helpful to achieving the objective

- University follows total academic and administrative transparency leading to excellent teaching-learning environment.
- Well qualified, dedicated and experienced faculty.
- More than 50% faculty members are with Ph. D. from premier institutions and are good researchers in their field of specialization. Some of them have postdoctoral experience.
- Good work culture and congenial environment in the University.
- Some of the R& D projects have been successfully executed and similarly many R&D and development projects submitted to AICTE/ DST/ MSME/ NitiAayog etc. Alumni of the University are lead researchers, Directors, CEOs in reputed National & International MNCs.
- NBA Accreditation of all eligible UG and PG programmes being submitted shortly. As MRCE, our UG programmes were accredited for 5 years by the National Board of Accreditation.
- Good Infrastructural Facilities available at each Departmental Level.
- Classrooms are well equipped with ICT tools like LCD, Video-conferencing etc.
- Curriculum is recent, relevant and choice based
- MOU with several Universities and Industries.
- Funds are available for research and development work. Quite good number of National & International Conferences, Short Term programs have been organized.

- University is involved in many Social initiatives.
- Graduates of MRU are highly ranked by employers across the country.
- Campus placement is more than 60% .
- Centres of Excellence are established in the area of in the area of Product Design and Development (Altair & Design Tech), Air Conditioning (Daikin India Pvt. Ltd.), Energy, Peace & Sustainability (Institute of Peace Research & Action), Alternative Dispute Resolution.
- Research & Innovation Clusters in the area of Computing and Materials for Environmental Sustainability. Students encouraged to take part in innovations and supported to have their own idea based startups.
- Fund generated through consultancy work. Good Networking with industries for consultancy works.
- The Industry-Institution interaction gap is now bridging up through continuous effort to call people from industry/academia on regular basis for keynote addresses in seminars/workshops and other presentations.

Weakness

Attributes of the institute that are harmful to achieving the objective

- Senior faculty needs to be recruited from academia and industry in many areas to strengthen research and innovation activities.
- Student interaction with other institutions and industry is insufficient and has a scope of improvement.
- Faculty-industry interaction needs some impetus. Industrial/field experiences for both faculty and students to be improved so that no. of joint quality projects could be increased.
- Govt. Supported Research Projects are not running as of now but definitely improve the outcome of research with funding support.
- Center for Instrumentation needs to be established.
- Quality of students need to be improved.
- University does not have residential facility for faculty and research scholars
- Alumni potential has not been effectively utilized.

Opportunities

External conditions that are helpful for achieving the objective

- Given diverse areas of expertise and experience of faculty, there are many opportunities to develop new courses and research and innovation clusters. This can help attract new faculty and students at PG/PhD level.

- There is huge opportunity to utilize the expertise and position of our alumni to start collaborative research and consultancy projects with industry and hence can prove vital for institute-industry linkage.

- There is an opportunity to expand beyond traditional boundaries of teaching-learning by starting on-line education programmes.

- Develop as a Faculty Training Centre for at least North West India. With present resources including expert faculty, hardware (servers, workstations, video conferencing equipment, latest audio visual aids), software and skilled supporting staff, there is great opportunity to take consultancy projects especially from within Haryana State.

- Though students are getting placement still students can be better placed in more reputed MNCs.

- Given diverse areas of expertise and experience of faculty, there are many opportunities to develop new courses and research & innovation clusters.

- Implementation of Student exchange programmes with other national and international Institutes/Universities.

- Enhancement of Institute-Industry interactions to run quality research and academic programmes.

- Increasing the quantity and quality of National & International publications.

- Development of more inter-disciplinary research facilities.

- More National & International collaborations for summer-trainings and placements.

- Establish collaborations with industry for application based R & D work. More stress on Patent filing.

- Designing of new course curriculum of PG Programmes based upon industrial need/relevance and starting of new industry based and sponsored PG programmes.

- Many organizations at national /international level are looking for linkages and hence MRU can develop more such ties for mutual benefit.

Threats

External conditions which could do damage to the objective

- Decline in trend of admissions in engineering disciplines is a great threat and will be affecting the resources available with the University.
- Lack of availability of quality faculty may restrict the expansion of the institute and affect the quality of teaching learning process and R&D work.
- Rapidly changing technological needs of the industry requires faculty and staff to remain abreast with these advancements.
- Obsolesce of syllabi due to rapid changes in the technology.
- Updation of labs is challenge due to highly disruptive technologies.
- Global economic crisis is putting lot of pressure on the resources of the University.

Proposed Targets

Achievements	Nos.@2020	Nos.@2022	Nos.@2024	Nos.@2026	Nos.@2028	Nos.@2030
Research Publications (Databases like Scopus/WOS)	1222 (322)	1350 (425)	1500 (550)	1700 (700)	1900 (900)	2200 (1200)
University h-index	23	28	33	38	43	50
IPR Filed/ Published/ Granted to faculty (INDIA/ USPTO)	25 + 5 + 08 = 38	33 + 7 + 09 = 49	40 + 9 + 10 = 59	50 + 15 + 15 = 80	60 + 20 + 18 = 98	70 + 25 + 22 = 117
Startup Graduated/In progress	1 + 7 = 8	4 + 10 = 14	7 + 15 = 22	10 + 20 = 30	15 + 25 = 40	20 + 30 = 50
UG Programmes	14	16	18	20	22	24
PG Programmes	9	10	11	12	13	15
Centres of Excellence (COEs)	5	7	8	10	12	15
Research & Innovation Clusters/ Advanced Labs	2	3	4	5	6	7
Pre-Incubation/ Business Incubator	Pre-Incubation	Pre-Incubation	Business Incubator	Business Incubator	Business Incubator	Business Incubator
Sanctioned Intake	1166	1216	1266	1316	1366	1416
Professors	12	14	16	18	20	22
Internships in collaborations	<50	150	325	450	550	700