

ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਬਠਿੰਡਾ

MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY

(A State Univ. Estd. by Govt. of Punjab vide Punjab Act No. 5 of 2015 and Approved u/s 2(f) & 12 (B) of UGC; Member AIU)

Bathinda-151001 (Punjab), India

REPORT

STRATEGIC PLAN AND DEPLOYMENT



MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY

Bathinda-151001 (Punjab), India

STRATEGIC PLAN AND DEPLOYMENT



2015-2021

**INTERNAL QUALITY ASSURANCE CELL
MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY
BATHINDA 151001**

STRATEGIC PLAN AND DEPLOYMENT

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STRATEGIC PLAN AND DEPLOYMENT

EXCERPTS OF STRATEGIC PLAN

ABOUT THE UNIVERSITY

Maharaja Ranjit Singh Punjab Technical University (MRSPTU), Bathinda (Erstwhile Maharaja Ranjit Singh State Technical University, Bathinda) is an affiliating Technical University, established by Govt. of Punjab vide Punjab Act No. 5 of 2015 notified through Punjab Government Gazette-Extraordinary (Regd. No. CHD/0092/2015-2017) notification No. 5-Leg./2015 dated 12th February 2015 and registered with UGC u/s 2(f).

With spontaneous upswing in demand for quality Technical Education, burgeoning pressure on the Premier Technical University of Punjab, Punjab Technical University, Kapurthala, to mitigate regional imbalance in distribution of Temples of quality Technical Education in the State, for exponential socio-economic growth of the Malwa region, to bridge the gap between demand and supply of employable technical human resource, exigency for creation of a new State Technical University in Punjab was realized. Consequent on the implementation of this Act, Technical institutions of eleven districts of Punjab have been affiliated to MRSPTU with effect of 1st July, 2015 including Barnala, Bathinda, Faridkot, Fatehgarh Sahib, Fazilka, Ferozepur, Mansa, Moga, Patiala, Sangrur and Sri Muktsar Sahib.

The objectives of this new Technical University at Bathinda are to provide, upgrade and promote Quality Technical Education, Training and Research in Technical Education to create entrepreneurship and a conducive environment for the pursuit of Technical Education in close cooperation with industry. In the pursuit of creating excellence in Teaching, Research and Skill Development, the University has to attain highest standards by following and conforming to norms/standards policies laid down by the All India Council for Technical Education, New Delhi and University Grants Commission, New Delhi.

As an outcome of the above endeavours, the University is expected to generate and maintain resources through consultancy services, testing services, Continuing Education Programmes, national and international collaborations, MoU, transfer of intellectual property rights, etc. MRSPTU will cater to the needs of Quality Technical Education in eleven districts of Punjab encompassed in its jurisdiction. New M.Tech. & Ph.D. Programmes are being initiated from 2016-17 academic sessions. New skill development certificate courses in 9 areas of Engineering in the Constituent Colleges of the University and four PG Certificate Courses in Pharmacy in Affiliated Colleges are also being planned.

VISION OF THE UNIVERSITY

To contribute towards the state, the nation and the world through advancement for attaining excellence in technical education and research, and to provide quality human

resource having high professional and ethical conduct to serve the needs of the industry and society.

MISSION OF THE UNIVERSITY

- To provide a conducive and inspiring environment for promoting advancement in technology and research by fostering freedom, empowerment, commitment, creativity and innovation.
- To provide competent and highly skilled professionals and entrepreneurs to meet the requirements of the industry and society for discovery and dissemination of knowledge.
- To inculcate high moral, ethical and professional values and standards amongst the students.
- To promote research and development in various fields of technical education and establishment of Centres of Excellence in collaboration with national and international institutions, industries and agencies.

Excerpts of the Strategic Plan for 2015-2024 are as follows:

- Accreditation and Approval
 - by UGC under Section 12 (B)
 - by AICTE
 - by CoA
 - by PCI
 - by AISHE
 - by NIRF
 - by NAD
 - by ARIIA
 - Association of Universities
 - Other national and international ranking agencies
- Financial Sustenance
 - Grant from State and Centre Govt.
 - Research Grants
 - Fund mobilization from own sources
 - Grants from UGC, DST etc. for infrastructure development
- Completion of University Campus
- Establishment of New Departments
 - In emerging area/established disciplines as per current demand
- Revival of Punjab Institutes of Technologies (PITs)
- Curriculum Development
 - Adaptation of AICTE/PCI/CoA/UGC guidelines for curriculum development
 - Implementation of CBCS
 - Implementation of OBE
 - Continual improvement in curriculum
- Academic Partnership with Foreign Universities and Organizations
 - At International Level
 - At National Level
- MoU/Collaborations
 - With University Level
 - With Organization
 - With Industry
 - With Research Lab
- Research and Entrepreneurship Initiatives
 - Significant research outcomes as a measure of quality research
 - Establishment of IPR Cell
 - Development of Institute Innovation Council (IIC) and Entrepreneurship Development–Cum– Business Incubation Centre
- Consultancy Services and Revenue Generated
- Placements

- Campus Placement
- Academia-Industry Interaction
- Examination Reforms
 - IT Reforms/Student services
- Administrative Initiatives
 - Policy and Regulations
 - Information Booklets
 - ERP Development
- Quality Practices Implemented in Academia
- Intellectual 'Faculty Pool'
- New Courses offered
- Certificate/Diploma courses
- Online courses in emerging areas
- Professional Development Programs
- Joint admission and brand building drive with affiliated institutions
- Biometric Attendance System
- Unique Concept of 'Skill' based Courses with multiple Entry-Exit System
- Handholding of Affiliated Colleges
- Other areas to focus
 - Improvement in quality of technical education in Punjab through close collaboration with industry with emphasis on upcoming cutting edge technologies such as AI, machine learning, IOT, data analytics, mechatronics and biomedical engineering, keeping in view the approaching disruptions on account of 4th industrial revolution; many of these courses will be offered as open elective available for students from different branches.
 - Further, modernization of curriculum with more practical component as per industrial demand.
 - Upgradation of infrastructure and facilities for up-to-date learning.
 - Setting up 'Centres of Excellence' in collaboration with leading industries and corporates.
 - Establishment of world class state of art R&D centre and promoting research in modern areas of technology, and areas of special relevance to Punjab, particularly, related to agriculture produce, agriculture waste, environment, energy proficiency and health.
 - Starting of joint academic programmes with international collaborators.
 - Development of MRSPTU campus as Model and PITs as Skill Development Hubs.
 - Skill development centric learning and courses.
 - Focus on placement of students and entrepreneurship development.
 - Online Courses (MOOCS) popularization.

STATUS OF DEPLOYMENT (STRATEGIC PLAN)

STRATEGIC PLAN DEPLOYMENT

Approval by UGC under Section 2 (f) and 12 (B)

In a short span of 04 years after its establishment, MRSPTU became the first technical University of Punjab to get approval under section 12 (B) and 2 (f); at present it is the only technical university from Punjab approve by UGC under 12B.Approval granted, after UGC Expert committee inspection. Approval under Section 12 (B) has made MRSPTU eligible to receive grants offered by UGC under various schemes.

Accreditation and Ranking

The University has recently ranked 4th in the beginner band in ARIIA ranking 2020-21, released by MHRD, Govt. of India. Additionally, all required approvals from statutory bodies are already obtained by compliance to the norms specified. Apart from it, University is also providing information to NIRF, AISHE etc. The University has also attained membership of AIU.

Financial Sustenance

MRSPTU, despite receiving only 150 crores against proposed 500 crores from IKGPTU, has sustained itself financially by adopting low-cost administrative approaches like minimum establishment cost, utilization of existing staff for administrative duties, recruitment of highly qualified faculty but as per need, in house development of software for admission, examination, affiliation process and ERP, and cutting on other expenses. Faculty members are encouraged to apply for research funding from various National and International funding agencies of Govt. of India and a dedicated MRSPTU Grant Cell has already been created. Faculty has submitted research proposals for over 15 crores to different agencies and University has already received research grant of about 9.0 crores. A grant of 35 lacs has also been received by Youth Welfare Department of the University under NSS. University proposals to establish an indoor sports complex are at advanced stage of approval for funding. Govt. of Punjab has also allocated grant-in-aid of Rs. 25.0 crores in budget for 2019-20 to the University. Release of the grant is still awaited. Additionally, a grant of 5.0 crores was also received from state govt. recently.

Completion of University Campus in stipulated time

Apart from well-developed campus with all facilities and having a residential capacity of 3000 students, the new buildings with aesthetic design and architecture with a total expenditure of about 115 crores is completed, which covered construction of administrative block, 6 academic blocks, central library, IT-enabled services center, lecture theatre complex, R&D center and Vice Chancellor's residence and eight University Departments have already shifted into new building.

Establishment of New Departments and Revival of Punjab Institutes of Technologies (PITs)

During this period, newly established departments- Pharmaceutical Sciences & Technology and Food Science & Technology have started offering various courses with almost full admission strength viz. M. Pharm in Pharmaceutics and Pharmacology specializations, B. Pharm, M.Sc. Food Science & Technology and B.Sc. Food Science & Technology with almost 100% admission record. Faculty members of these two departments have also fetched grants of about 5.0 crores from various agencies of Govt. of India in last two years.

Furthermore, Punjab Institute(s) of Technology at Rajpura and GTB Garh (Moga) have been revived by appointing dedicated directors/staff and developing necessary infrastructure. This has resulted in impressive increase in admissions at these institutes. A new Institute, Punjab State Aeronautical Engineering College at Patiala is also adopted as constituent college offering various programmes in Aeronautical Engineering has been started.

Emphasis has been on infrastructural developments, laboratory upgradation, establishment of high class research facilities and Centre of Excellence in various areas, along with various scholarships and grants for students, and faculty members for their academic and research advancements.

Curriculum Development as per AICTE, PCI and UGC Guidelines

The modern AICTE curriculum has already been adopted and implemented by MRSPTU. Flexible Choice Based Credit System has been implemented on IIT pattern and as per UGC Guidelines for 'Learning of Interest' from 2016-17 itself. As an Invited Expert, Vice Chancellors have significantly contributed towards development of scheme and syllabus

of various technical courses by AICTE, and drafting AICTE's new internship policy to be implemented nationwide uniformly; from 2018-19 academic session syllabus has been again updated as per AICTE Guidelines for implementation of uniform syllabi throughout India.

Adoption of Outcome Based Education Framework

The University has adopted outcome-based education by aligning all courses and programmes with Programme Outcomes, Programme Specific Outcomes and Course Outcomes and developed a quantitative framework for analyzing the attainment levels and understanding the students perspectives to achieve academic goals. Details of the same is given at https://www.mrsptu.ac.in/iqac_outcome_attainment.php

Academic Partnership with Foreign Universities and Organizations:

MRSPTU has signed MoU to start joint certification of undergraduate and post-graduate programs with Thomson River University, Canada, in 2+2 mode, whereby students pursuing B. Tech (CSE, IT) or BCA at MRSPTU are eligible for B. Sc. (CSE) of TRU after completing first two years from MRSPTU and final two years from TRU, BC, Canada. MOUs have also been signed with Wayne State University, USA (for all Engineering courses in 3+1 mode), Concordia University Edmonton, Alberta, Canada, NorQuest College, Edmonton, Alberta, Canada, and Synergy University, Russia. Further collaborations with Petersburg University, Russia, University of Highlands & Islands, Scotland for collaboration in aeronautical engineering and aircraft maintenance are in process; delegation of the latter has already visited university.

Many more collaborative programs have been envisaged and signed during visit to Canadian Universities as member of the delegation led by Honorable Minister for Technical Education and Industrial training including, University of Canada West, Vancouver, University of Vancouver Islands, Victoria, and many more are in the offing.

An MOU has been signed with Amazon for training of faculty and students in CLOUD computing; students and faculty are given free access to Amazon cloud computing platform; a workshop for training of faculty has already been conducted by Amazon experts and students as well as faculty members have already registered on Amazon cloud computing portal. Collaboration has been initiated with Google for Android App development and workshops for training of faculty have been organized. An MOU has

already been signed with Ace Skills, UK, for international skilling and certification. For overseas skill certification MOU has been signed with partners from United Kingdom such as UK Skills, to prepare manpower for employment abroad.

MRSPTU has decided to initiate academic collaborations with few of these Universities/organizations to establish the model of Joint Academic Programs with international certification.

MoU/Collaborations at National Level:

In order to achieve academic excellence, MRSPTU has signed MoU with renowned industries/academic institutes/training partners viz. IIT Bombay, SAP Student Academy Program, NITTTR-Chandigarh, Central University-Bathinda, GADVASU-Ludhiana, GNDEC-Ludhiana, INFLIBNET-UGC, Josh Technology, Central Tool Room-Ludhiana, BKSB India Private Limited, Engineering Staff College, Hyderabad, Mobile Tutor Pvt Ltd, Chennai, True Chip, Noida, Apron Systems P. Ltd., Noida, Red Hat Linux etc.

Leading industries and organizations like Oracle, IBM, Huawei, Aspiring Minds, Cheema Boilers Ltd., EC Council etc. are also in collaboration soon for academics, training and research.

Various MoUs/Collaborations are given at <https://www.mrsptu.ac.in/mou.php>

Research and Entrepreneurship Initiatives

University has already initiated research programs leading to Ph.D. in disciplines of Engineering & Technology, Commerce & Management, Pharmaceutical Sciences, Food technology, and Sciences and regular admissions are made twice in a year. Regulations for Ph.D. degree and other Policies for Ethics in Research are framed. Renovated and upgraded Research Labs are established at various departments. This has resulted in significant increase in quality of publications, which is enhancing MRSPTU's recognition at global level. University has also decided to establish an R & D centre with state of the art facilities and building construction for the same has been completed. Dedicated Intellectual Property Rights Cell for Patents/Technology Transfer, Entrepreneurship-cum-Business Incubation Centre and Innovation Cell are established at University to foster innovative research and commercialization leading to start-ups from University and already 17 IPRs have been filed and/or granted. Till date, two copyrights/designs are awarded by Indian Patent Office. Two patent applications are under scrutiny phase in

collaboration with Punjab State Council for Sciences and Technology while 3 more patentable leads are in concept defining phase. So far research grants of more than 5.0 crores have already been sanctioned by various funding agencies. ***Details of the research achievements are given at <https://www.mrsptu.ac.in/IQACAnnualReport.php>***

Consultancy Services and Revenue Generated

The University is active in offering various consultancy services in different sectors to Government/Private/Industrial organizations/agencies amounting to a revenue generation of >9.5 crores in last 5 years. Furthermore, University is also empanelled by Punjab State Pollution Control Board. Furthermore, Ministry of Food Processing Industries, Govt. of India has recently sanctioned 2.87 crores for establishment of Food Testing Lab at the University and released the first installment of the grant also. This lab will act as testing centre for various food manufacturing industries and firms. These will further increase the revenue generated through consultancy to various industries in and around Punjab.

Improved Placements

A placement and training cell has been established and a dedicated Director training and placement has been appointed. Special emphasis has been placed on placement of students and significant improvement in placement of students from MRSPTU campus is achieved. More than 275 students from campus have found placements in reputed companies in each of the last two academic sessions itself with pay packages ranging from Rs 2.4 to 10.0 lacs.

In addition to this, MRSPTU has successfully hosted and organized five mega Job Fairs under '*Ghar Ghar Rozgar*' scheme as per the vision of Hon. Chief Minister, to provide good placement opportunities for students from campus and from all over the region. Besides, Campus and Constituent Colleges, the placement will also cater to the affiliated colleges.

Examination Reforms

- Unique practices like real time online monitoring of examination centres/evaluation centres/coding halls on campus as well as affiliated colleges by CCTV, exclusive software based system for grading, result announcements & DMC printing and strictly fair evaluation process have been implemented in this period. The efforts has resulted

in only 5 to 10% students applying for re-evaluation [> 80% in other University).To bring seriousness in evaluation process 13 evaluators have been banned for shoddy evaluation work and many centres have been closed on account of mal-practices.

- Evaluation pattern as per UGC guidelines.
- Checking of non-attending/dummy admissions/impersonation through comparison of signatures of students on theory and practical examinations attendance sheet.
- Students are allowed to get photocopy of evaluated answer script so that they can see the evaluation and decide if they wish to get it reevaluated
- Process has already been initiated for digital evaluation of answer scripts.

Administrative Initiatives

- Regulations of the University have been prepared, approved by BOG and submitted to Government for notification.
- Various bodies such as College Development Council, Academic Council, Sports Executive Committee, Cultural Executive Committee and Advisory Committee for NSS, Board of controls in each academic department, Board of Studies and faculties in various disciplines have been constituted and their meetings are being held regularly for smooth functioning.
- For smooth and transparent functioning, various policy documents, information booklets and guidelines are drafted and implemented. Details of such documents are given at https://www.mrsptu.ac.in/iqac_policy_documents.php
- Streamlining of affiliation & examination process through online system & regular audits.
- In house software/ERP development for various modules like admission, IQAC, Finance and Purchase, Grievance Redressal etc. are developed. Details of ERP modules developed are given at <https://www.mrsptu.ac.in/IQACAnnualReport.php>
- Complete elimination of cash payment and total digital online transactions at all levels
- All recruitment processes have been made totally transparent.
- Digital Campus with all transactions in online mode and no cash is being received.
- All purchases/work allotments above Rs. 2.0 lacs are made by e-tendering process.

Quality Practices Implemented in Academia

- **Intellectual 'Faculty Pool'** - Already recruited experienced doctorate/ post-doctorate faculties from leading institutes like IITs, NITs, BITS, PU, Thapar University, GNE etc. through transparent process.
- **New Courses offered** – Newly established departments at University is offering various technical courses viz. M. Pharm. in Pharmaceutics and Pharmacology specializations. B. Pharm., M.Sc. Clinical Research and M.Sc. Food Technology, B.Sc. (Hons) in Sciences, B.Sc. Food Technology, Integrated BCA –MCA, B.Tech in Aerospace Engg. (Avionics) and Bachelor of Management Studies (Airline Tourism and Hospitality) etc. have been started.
- **Certificate courses** - Specialized certificate course in Apparel Cutting & Sewing has been offered and course in Waste Management is being developed for training Hygiene workers.
- **Professional Development Programs**
Professional development programs such as expert lectures, seminars, workshops, field visits, industrial visits and educational tours, case studies, surveys, training, conferences, symposia, finishing schools etc. are regularly conducted at University and affiliated colleges. University has entered into an MOU with AICTE for faculty development programs with support from AICTE and conducted a large no. of professional events for knowledge upgradation of teaching and non teaching staff members.
- **Biometric Attendance System** – Already implemented at University campus and efforts are on to implement in affiliated colleges
- **Unique Concept of 'Skill' based Courses with multiple Entry-Exit System**
As a unique initiative, Skill Certificate Courses in 9 disciplines have been designed and introduced to develop practical skills & improve employability/entrepreneurship among students as 'Sandwich Programs in collaboration with leading industries & training organizations. NSQF compliant curricula of these courses has been developed by NITTTR utilizing services of experts from all over India and has multiple Entry-Exit points to improve self-employability. The specialized courses offered are in the area of Plumber, Welder, Electrician, Tools & Die Maker, Computer Maintenance & Programming Assistant, Food Processing, Farm Equipment Technician, Refrigeration and AC Mechanic and Servicing & Maintenance of Electronic Instruments. Most of

these courses are now offered at PITs to enhance employability of youth; each course has its own industrial training partner.

Handholding of Affiliated Colleges

- All dealing with Colleges such as application for affiliation, payment of fee, generation of affiliation letters all are carried out online and in a transparent manner.
- Completed process of academic & infrastructure verification for all affiliated colleges
- Regular Feedback & improvisation
- Start of new courses as per the need of the time/market requirement.
- Benefits of collaborative programs with Foreign Universities and MOU are also extended to the affiliated colleges.
- Joint Admission Campaign in other states.
- Establishment of advanced research facilities with access to all.
- Financial Grants for organization of technical events/faculty development programmes/ workshops/ seminars/conferences.
- Centralized Research & Library Services extended with on Campus access to e-journals for all including affiliated colleges.
- Joint Placement Drives with affiliated Colleges.

Future Plans

- Improvement in quality of technical education in Punjab through close collaboration with industry with emphasis on upcoming cutting edge technologies such as AI, machine learning, IOT, data analytics, mechatronics and biomedical engineering, keeping in view the approaching disruptions on account of 4th industrial revolution; many of these courses will be offered as open elective available for students from different branches.
- Further, modernization of curriculum with more practical component as per industrial demand.
- Upgradation of infrastructure and facilities for up-to-date learning.
- Setting up 'Centres of Excellence' in collaboration with leading industries and corporates.

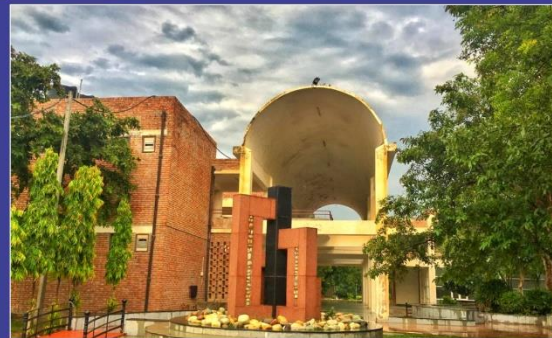
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- Starting of joint academic programmes with international collaborators.
- Development of MRSPTU campus as Model and PITs as Skill Development Hubs.
- Skill development centric learning and courses.
- Focus on placement of students and entrepreneurship development.
- E-content development and LMS
- Online Courses (MOOCS) popularization.



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