

# त्रिपुरा विश्वविद्यालय TRIPURA UNIVERSITY

(केन्द्रीय विश्वविद्यालय / A Central University)

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## CERTIFICATE

### 1.1 - Curriculum Design and Development

1.1.1 - Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which are reflected in Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs) of the various Programmes offered by the Institution.

The relevant and supporting documents for the above mentioned criteria are attached in annexures.

  
27/9/23  
[ Registrar ]

(Dr. Deepak Sharma)  
Registrar  
Tripura University

## **CURRICULAR ASPECTS**

### **1.1 - Curriculum Design and Development**

#### **1.1.1 -**

##### **Hindi: Program Outcomes**

The Department of Hindi, Tripura University has always been committed to the 'steady' development of students. Under the department of Hindi, Postgraduate, PGDT(H), IMD and Ph.D course are available. The purpose of which is to advance Indian Knowledge Tradition, literature, history, Indian Culture and the ways of society among the students. Apart from this, the Hindi curriculum has also contributed to the multi-faceted development of students.

##### **Program Specific Outcomes**

The department has been organizing literary competitions such as debates, extempore speech, poetry writing, etc. which plays a vital role in the enhancement of the literary talent in students. The department is committed to keeping the students connected with literature and society through different mediums, like wall magazine, presentation in the seminar, projects where all students get an equal chance to showcase their talent. In addition, the department invites experts and litterateurs associated with the courses for enhancement of the knowledge and experience of the students. Professors of the Department, specializing in various disciplines of Hindi literature, are constantly contributing to the multidimensional development of students

##### **Course Outcomes**

Through the M.A Hindi courses, the students are able to

- Understand the Hindi literature, which will help them in being creative, write prose, poetry, plays and also develop their critical acumen.
- Know the relationship between literature and society & one affects the other directly or indirectly
- Establish themselves in the field of mass communication, social media, advertisement making, drama, translation, and official Hindi etc
- Demonstrate Hindi language as an international language
- Help establish them as script writers who have a good scope on platforms like movies and T.V serials etc.

##### **Kokborok: Programme Specific Outcomes (PSOs)**

The programme aims:

PO 1: To analyze and evaluate the socio-cultural, economic and religious conditions of Tripura in the context of Kokborok Language, Literature, Folk literature and Culture.

PO 2: To meet the contemporary challenges and find out their solutions by understanding the philosophical aspects of Kokborok Literature and Culture.

PO 3: To engage the students with various skills viz. drafting and revising, style of writing and analytical skills.

PO 4: To develop an appreciation for the language, interpret and appreciate the literary texts.

PO 5: To develop skills in literary analysis and language analysis.

PO 6: To develop a capability in the students for becoming a good translator/interpreter.

PO 7: To inspire and motivate the students to take up further studies and research.

PO 8: To prepare the students for job opportunities in various fields.

**Linguistics & Tribal Languages:** The Department offers courses on the languages of the North-East India as part of the MA programme in Linguistics and Tribal Languages. The Programme also covers languages of India and South Asia.

**Sanskrit:** Cultivation of traditional Sanskrit learning in the princely state of Tripura was in full swing from early times under the royal patronage. Taking this rich heritage forward Department of Sanskrit started its journey in Post Graduate level since 1977 with an aim to connect the history and tradition with modernity. In between curriculum has been designed and redesigned several times keeping the shifts and trends of Sanskrit learning in the country in mind. Recently, many new and innovative subjects and themes have been introduced in the curriculum along with language teaching and literature studies which still remain the prime focus of the Department. The Department aims to meet the growing need for well-qualified Sanskrit scholars who will help in Nation Building.

Keeping the wholesome development of the student in view utmost care has been taken to design curriculum so to cover almost all fields and areas of Sanskrit learning in the M. A. in Sanskrit Programme. The present programme aims to provide not only high level theoretical knowledge but also to build cognitive skill among the students so that they can think deeply, research and produce new knowledge and contribute to Sanskrit learning progressively.

However, the main objectives of the programmes are as follows:

□ To preserve and promote the rich and continuous Indian intellectual tradition that flows in the language of

Sanskrit.

□ To prepare the students in critical thinking so that they can successfully comprehend various concepts, analyze and build their understanding effectively.

□ To prepare the students with excellent communication skills especially in Sanskrit, capable of communicating effectively in various context, thus sharing new knowledge with other researchers from other Institutions and Universities.

□ To prepare the students for national and international level academic endeavours in Sanskrit and allied fields such as linguistics, translations, various social sciences and interdisciplinary studies.

• To provide students with an academic environment nurturing excellence, leadership, ethical and moral values in them and igniting zeal for life-long learning that is needed for a successful professional career.

**Music: M.A. in Classical Dance (Kathak)**

Train students to analyze and respond to sensory perception through

PS01:

gestures and skills unique to dance Demonstrate increased movement skills, concentration and physical control in performing movement for artistic expression PS02:

**M.A. in Hindustani Music (Vocal)**

PS01: Identify and perform various complex rhythmic patterns.

PS02: Render vocal expressions based on the tonal, modal, chromatic, and atonal systems.

PS03: Sensitize students on the affective vitality of Hindustani Classical Music as a natural anti-depressant.

**Ph.D. in Music**

PS01: Explore potentially diverse strands of music with the aid of different

funding agencies.

PS02: Prepare students for popular professional career choices like music critics, commentators etc.

PS03: Encourage academic research oriented scholarship on diverse kinds of music.

**Mathematics:** Programme Specific Outcome At the end of the programme student- Inculcate mathematical reasoning, be equipped with skills to analyze problems, find solutions of them, formulate an hypothesis, evaluate and validate results, and draw reasonable conclusions thereof. get knowledge on various topics in pure and applied mathematics, which will enable them to pursue research at reputed academic institutions get the knowledge of a wide range of mathematical techniques and application of mathematical methods/tools in other scientific and engineering domains develop effective scientific and/or technical communication skills(both oral and writing) get proper preparation for appearing in NET, SET, GATE, etc. choose career options in Financial sector, Banking sector, IT sector, R&D Department of various industrial sections, Administrative services, Teaching, independent consultant, or become entrepreneur with the knowledge of Mathematics.

**Botany:** As the curriculum addresses practical application in environmental, agricultural, health issues, and also integrates knowledge from genetics, molecular biology, biotechnology, environmental sciences, and ecology; it has relevance to biodiversity conservation, crop improvement, sustainable use of medicinal plants at both local and national level. It caters for food security, environmental management and biotechnological applications. It can also promote eco-tourism by conserving important/endemic/valuable/ unique plant species in Tripura.

**B Voc Rubber Technology:** India is the 4<sup>th</sup> largest producer and 2<sup>nd</sup> largest consumer of natural rubber in the world. Tripura is the 2<sup>nd</sup> largest producer of natural rubber in India and having one Rubber Park at Bodhjungle. Few Rubber Industries have already been set up in Tripura for making rubber thread, tread rubber manufacturing, rubber band making, tyre retreading, ISNR manufacturing etc and some new industries have shown interests. These industries require trained man-power.

Above 40 million people of India are employed in Rubber based Industries which is contributing above Rs. 40 billion each year to the National Exchequer through taxes, duties and other levies.

The rubber industry comprise of tyre and non-tyre industries with a turnover of more than Rs.63,000 crore. The Indian rubber industry consists of around 6,000 units including large, medium and small industries. There is huge demand of skilled man power to serve these industries. Tripura is also having So keeping in mind the huge demand of skilled workers Tripura University (A Central University) launched B. Voc Rubber Technology program in collaboration with National Skill Development Corporation (NSDC) and Rubber Skill Development Council (RCPSDC), New Delhi. The course is approved by UGC and is equivalent to any bachelor degree course. This is job oriented course with 100% placement opportunity of the students at various rubber industries and Govt. Enterprises in India. In addition, Tripura University has been awarded as the first University in India to tie up with Industry by the Rubber Skill Development Council (RCPSDC), New Delhi.

The program is designed to impart hands-on training to students starting from rubber plantation, latex collection, and rubber sheet preparation to rubber product manufacturing. MoUs have been signed with various institutes and organization like Rubber Board, AIRIA, RCPSDC etc for providing skill based training to the students. As per NEP, the course also has multiple entry-exit option.

**Business Management:** Yes, both the BBA and MBA programs offered by the Department of Business Management have specific program outcomes (POs), program-specific outcomes (PSOs), and course outcomes (COs). These outcomes are mentioned explicitly in the BBA and MBA syllabus.

**Commerce:**

#### IMD in Commerce

PSO1: Facilitate theoretical as well as practical knowledge about the different aspects of the business perspectives which prepare them to work in various organizations.

PSO2: Attain expertise in various domain areas like management, economics, accounting, costing and taxation.

PSO3: Enable students to work in various industries like manufacturing, service, retail, banking and finance etc.

PSO4: Enable students to incubate startups.

#### Master in Commerce

PSO1: Enhance the computer application in business through the latest version on tally and e-commerce principles for enhancement of the employability of the learners.

PSO2: Develop decision-making skills through costing methods and practical application of management accounting

principles.

PSO3: Develop communication skills and build confidence to face the challenges of the emerging world.

PSO4: Enhance entrepreneurial skills for starting new business ventures

#### Ph.D. in Commerce

PSO1: Instil confidence in handling numerical data.

PSO2: Build an intuitive understanding of the most modern tools and techniques of research methods in accounting and finance.

PSO3: Motivate to undertake narrative and evidence-based high-quality research in the changing environment

PSO4: Communicate their research findings in high-quality journals.

**Journalism and Mass Communication:** Ever since its establishment, the Department of JMC has produced successful alumni who are well placed in media organizations in the State and outside, often acting as catalysts in bringing changes in journalism as the curricula developed by us has relevance to the local, national, regional and global developmental needs of a course in Mass Communication. The programme outcomes (POs) of JMC course offered and implemented by JMC Department has such a nice relevance that many of our students are pursuing a career in media industry, some of them are also pursuing their research activities in various reputed media institutions within the country while others became media entrepreneurs in this region, in areas like photography, cinematography, script writing, cinema direction, video production, video editing, media management, radio journalism. In a nutshell, a course in journalism and communication meets all the criteria of a professional course that meets all standards of POs, PSOs, and COs that media studies has become one of the most sought courses offered by Tripura University. PSOs are such that the Department of Journalism and Mass Communication is committed to groom the students to become part of the worldwide media industry by acquiring hands on experience in Print Media, Electronic Media, New Media, Public Relation, Advertising and Marketing. Considering the global media set-up and demand in the region, state and national level, the Department of Journalism and Mass Communication, TU marches hand in hand in collaboration with industry and academia of the State and the region. It provides the teachers and students the opportunity to exchange and share their individual ideas. Above all it is aimed at producing professional and responsible media personnel's who are best at their creative ideas.

**Law:**

1. Law and Social Transformation in India (101C): The objective of this paper is to sensitize the students and promote awareness about Indian approaches to social and economic problem in the context of law as a means of social control and change.
2. Indian Constitutional Law: The New Challenges (102C): The study of the Constitution being the fundamental law, an insight into its new trends is essential for a meaningful understanding of the legal system and process and the students should be exposed to new challenges and perspectives on constitutional development.
3. Company Law (103E): Companies are no doubt powerful instruments for development and besides bringing returns and financial benefits to the capital and labour, they also help ameliorate the living conditions of masses. The paper aims to study dangers of market risks along with the basic principles of incorporation.
4. Competition Law (104E): The course will focus on and will aim to develop an understanding of the law and principles of competition policy in countries and regions across the globe.
5. Legal Research and Research Methodology (201C): Growth of legal science in India depends on the nature and career of legal research. A post graduate student of Law should get an insight into the objective of legal research. The understanding of the law and development of the Law can be done by legal research by adopting scientific methodology.
6. Judicial Process (202C): A lawyer, whether academic or professional, is expected to be competent to analyze and evaluate the legal process from a broader juristic perspective.
7. International Trade Law (203E): Import and export of goods and raw materials is a complex, complicated and intricate activity as it involves elaborate economics, fiscal, budgetary and monetary policy considerations. The paper aims to analyse the stated objectives.
8. Corporate Finance (204E): The objective of the course is to acquaint the students with the organization, functions, lending and recovery procedures and also the process of the flow and out flow of corporate finance.
9. Law of Intellectual Property (301E): The Law relating to intellectual property protects the right to mental labour and with modernization crucial questions arises with regard to such matters and the paper aims to acquaint the students with the same.
10. Cyber Law (302E): Development of cyber law is a



recent phenomenon. It is still in an emerging stage and continuously evolving every passing day. The course offered by the institute intends to spread awareness among the students about the cyber laws.

11. Field Work (303C): The objective of this paper is to acquaint the students with the practical aspect of collection of data and interpretation of the data to analyse the objectives of relevant legal concerns thereby adding practical knowledge.
12. Dissertation (455C): The objective of this paper is to conduct research on any legal issues or any socio-legal issues so as to find the gaps and problems in the existing legislations and thereby after analysing to come up with practical solutions and suggestions.

**Library and Information Science:** The Department of Library and Information Science was established in the year 2016 on 29.02.2016 with a view to furnish the libraries in the region with vivid and skilled manpower. The Department is imparting one year truncated Post Graduate leading to the degree of Bachelor of Library and Information Science (B.Lib.I.Sc.) CBCS model curriculum in LIS from 2016-2017 and revised CBCS curriculum of UGC model LOCF 2020-2021. The Department also started 1 year Master of Library and Information Science (M.Lib.I,Sc.) course from the academic session 2017-2018 to provide advanced knowledge on the subject and equipped students with the techniques of managing modern libraries in the digital era and from 2018-2019 the department has also started imparting the Ph. D. programme in Library and Information Science. The need for the skilled library professionals having a degree in LIS with technical knowledge is inevitable in any library in this digital era. The courses are prepared, keeping in mind the current scenario of higher education in the field of LIS in India and job market. The Department is working to produce well equipped manpower by offering a strong theoretical foundation as well as hands on practical classes, seminars, presentations, curriculum stipulated practical visit to reputed libraries of India, and internship program in Central Library of Tripura University. So far, seven batches of B.Lib.I.Sc and six batches of M.Lib.I.Sc. students have come out successfully. It is a matter of great privilege and achievement for the department that seventy-three students have been placed in different capacities as Assistant Professor, Guest Faculty, Librarian, Assistant Librarian, Library Trainee in University Department of Library and Information Science, premier University, College & School libraries and research institutes in the state of Tripura as well as outside the

state such as ICFAI University, Nagaland, and Tripura, West Bengal State University, Kolkata (WB), INFLIBNET, Gandhinagar (Gujarat), Tezpur University (Central), Assam, Central University of Sikkim, Management Institute, Kolkata (WB), Nalanda International University (Bihar), IIT (Madras), Chennai, IIT (Mumbai), IIT (Delhi), IGNOU (New Delhi), NVS Assam, Mizoram, Arunachal Pradesh, & Tripura, SIPARD, Tripura, Central University of Karnataka and other jobs in the Govt. of Tripura. Eleven students have successfully cleared the UGC-NET and two students UGC-JRF examinations till 2023. Our students and scholars are proactively taking part in papers presentation in various National & International seminars, conferences, & webinars and published papers in learned LIS journals. Students also participate in various co-curricular activities organised by the university, adding feathers to the department from time to time.

**Physical Education:** The Department of Physical Education is a beacon of academic excellence and practical learning, offering a dynamic environment where both theoretical and hands-on experiences thrive. Our Department is committed to delivering high-quality education that not only focuses on enhancing the academic performance of students but also nurtures their physical, mental, and cognitive development. This vision is reflected in our blend of modern classroom facilities and extensive on-field training, designed to foster well-rounded growth among our students.

Our Department is equipped with three classrooms, each furnished with state-of-the-art smart room facilities that enable seamless integration of technology into the learning process. The inclusion of these technologies ensures that students engage with course materials in an interactive and effective manner. By utilizing various Information and Communication Technology (ICT) tools, such as projectors, interactive whiteboards, and audio-visual aids, we are able to provide an immersive learning environment. These tools enhance understanding, encourage engagement, and cater to diverse learning styles, ensuring that each student is empowered to grasp complex concepts easily.

Our approach emphasizes the importance of varying teaching methods, adapting to the needs of the students, and offering multiple perspectives on each subject. We incorporate video tutorials, online resources, and virtual simulations to make learning more accessible and engaging. This tech-driven strategy has proven to be highly effective in boosting students' performance, as it caters to both visual and auditory learners and creates an environment conducive to deep learning.

In addition to traditional methods, we are dedicated to incorporating innovative teaching strategies that enable students to maximize their potential. By exploring a variety of instructional techniques, including problem-based learning, case studies, and collaborative group work, we encourage critical thinking and independent thought. These methods not only help the students to bring mastery in theoretical knowledge but also prepare them to apply those knowledges practically in real-life situations.

The use of ICT tools is not just limited to the classroom. We encourage the use of digital platforms for assignments, discussions, and peer collaborations, allowing students to develop a range of skills, such as time management, research capabilities, and effective communication. These platforms also offer students the flexibility to learn at their own pace, ensuring that learning is personalized and tailored to each individual's needs.

Being a Department of Physical Education, we understand that practical experience is as vital as theoretical knowledge. Our department boasts excellent on-field facilities that allow students to engage in practical training and enhance their skills in a variety of physical activities. The sports fields, gymnasium, and multi-purpose indoor courts provide the perfect setting for students to develop their knowledge of physical fitness, sports skills, and tactical understanding of the subject.

We believe in the holistic development of our students, which is why on-field training goes beyond simply practicing physical skills. Through a series of carefully structured training sessions, students are encouraged to think critically, solve problems, and make quick decisions under pressure. These activities are designed to enhance cognitive abilities such as focus, strategic thinking, and teamwork. Moreover, we provide individualized coaching to students, focusing on the development of specialized skills tailored to their chosen sport or area of interest.

**B.Voc FiLm and Video Production:** The B. Voc Film and Video Production programme was launched in the year 2015. It is a skill based course. This course is equivalent to a Bachelor's Degree as offered by our University in various streams. The course is approved by the UGC and National Skill Development Corporation (NSDC) under Ministry of Skill Development and Entrepreneurship, Govt. of India. This course has been designed as per Skill India Mission scheme launched in 2015 in the line of Kaushal Bharat, Kushal Bharat. It is an umbrella scheme that has theoretical knowledge and practical application under it. The chief objective is to empower the youth with adequate skill sets

of Film and Video Production that will enable their employment in relevant sectors and also improve productivity. Youth Skills for Peace and Development' calls upon every individual to recognize the untapped potential of young people as agents of positive change. This course is valid and recognized by the government and industries as it validates the successful completion of skill training and enhances the chances of employment. The primary objective is to create a skilled and productive workforce that can contribute to the growth and development of the youth, enabling them to secure employment or become self-employed. The course is designed to impart hands-on training to students in the field of film making and video production. The course structure emphasizes on both theoretical and practical aspects of film and video production and targeted to prepare skilled personnel by providing them with the desired level of competence required to get an entry to film industries. After completion of the B.Voc degree, aspiring students can go for higher studies in film production and appreciation courses such as, film studies. In addition, the course is very flexible in nature with multiple points of entry and exits in the line of NEP-2020. Students can opt out of this course after completion of one year of joining, with a Diploma in Film and Video Production. After completing two years students will be awarded with an Advanced Diploma in Film and Video Production, while after the completion of three years, the students will be awarded with B. Voc Degree in Film and Video Production which is equivalent to any bachelor degree. The students of these course are subjected to assessment processes aligned with NSQF guidelines to maintain industry level standard. Presently the Media and Entertainment Skill Council (MESC) - a well reputed, NSDC approved training and assesment organization for various Qualification Packs (QPs) with their associative job roles for making employability skill to the trainees in the media and entertainment sectors, are assessing and providing the certificates to the students. Every year, a good number of students are qualifying and obtaining certificates from MESC. The assessment tests for various parts of the academic curriculum are conducting by MESC as per semester course contents of B.Voc film and Video Production in Tripura University. Many pass out students are working in different media houses, as freelancer for local news channels while some others have become entrepreneur in media and entertainment.

**Economics:** Syllabus is designed based on UGC model curriculum and syllabus of other Central Universities by

the syllabus committee formed for the purpose of which External Experts are member. The draft syllabus is placed before the BPGS for approval. The same is routed through Academic Council.

**Education:** The curricula of Department have both consistently drawn from course structures of Universities across India, and also designed special programmes unique to the multi-ethnic, multi-cultural and multi-lingual identity of the region. Department has been continuously introducing different courses suited to the ecology and bio diversity of the State. Owing to its geographical location, Department has taken care to invest a major component of its curricula to address rural and ethnic livelihoods and resources in the state of Tripura and the North-East. The Department has moved ahead in the recent times in introducing many emerging areas of knowledge into its curricula to cater into the demands of industry in a rapidly transforming India of the 21st century.

**History:** The Department of History was involved in revising its undergraduate syllabus as per NEP guidelines during the year 2023-24. The syllabus includes detailed reference to Programme outcomes (POs), Programme Specific outcomes (PSOs) and Course Outcomes (COs).

**Liberal Arts:** Liberal Arts education is a process of questioning, rather than a set of answers, it is by definition a lifelong project. Liberal Arts seeks to create in students a love of learning and the capacity to continue their personal and intellectual development. Liberal Arts education seeks to stimulate an understanding of the content, methods, and theoretical approaches of different disciplines, as well as the capacity to integrate knowledge across disciplinary boundaries. To introduce students to the basic knowledge of entrepreneurial skill, the meaning, nature, and scopes of entrepreneurship, to acquaint students with the knowledge of model business plan preparation, and to provide objective-oriented learning on model business plan preparation for various enterprises.

**Political Science:** According to the email dated 05/12/2024 sent by the Director, IQAC, the curriculum during the Academic Year 2023-24 has not been updated. Following the NEP 2020, the department will likely revise the syllabus in 2025.

**Psychology:** The syllabus offers specializations in Clinical Psychology and Organizational Psychology. Due emphasis has

been placed in developing psychologists with innovativeness in order to enable the students to become self-employed.

**Rural Studies:** The Undergraduate and Post Graduate programmes have been designed as a multidisciplinary programme, where students will equip themselves to cater real life problems crops up in a rural society with significant success. Towards this professional attitude, the programmes will not only help students to build up knowledge on different dimensions of a rural society, but also will provide hands-on training to overcome such problems. In this backdrop, the specific objectives of the programmes are -

- To impart education and knowledge required to understand the problems prevailing in a rural society
- To provide hands-on training for working as a liaison between the government infrastructure and the beneficiaries
- To provide theoretical and practical knowledge for becoming a successful entrepreneur
- To equip students with live training for becoming successful professional in different Government projects and programmes.
- To prepare Rural Development Professional with ethical, social and moral values.

The outcomes of the programme are to create Knowledge about Rural Society: Acquire fundamental knowledge about rural society. To do planning Ability: Able to prepare framework for future rural development, problem Analysis Ability: Able to understand the real life problems of rural society. Further to build leadership Skills: Able to enhance the ability of leadership. To develop professional Attitude: Competent enough to undertake professional job as per demands and requirements, to develop communication and skill development: Empower themselves by communication, professional and life skills. To have clear understanding of Rural Environment: Become socially responsible citizen with global vision and finally, develop entrepreneurial skill and attitude: Acquire the primary research skills, understand the importance of innovation, entrepreneurship and incubation abilities.

There are certain Programme Specific Outcome (PSO) of the syllabus, which are as follows -

PSO1: Identify the problems prevailing in rural societies by applying fundamental concepts of rural development.

PSO2: Apply practical knowledge, learned in the programme, for developing blueprint of rural development.

PSO3: Able to apply research skills to conduct research and other important studies on different aspects of rural

development.

PSO 4: Sensitize with the motivating value of rural development in real life problem solving mechanism.

PSO 5: Become an entrepreneur by exploring emerging opportunities in rural areas with the help of rural resources

In this programme, altogether seventeen courses are offered. Each of the courses is designed to help students to understand the basic issues covered in the course along with the skills to handle practical problems.

Integrated Master's Degree Programme (IMD) in Rural Studies has been started from the academic year of 2019 with an intake capacity of twenty students. The programme has the objective to introduce an interdisciplinary programme to the fresh students after they completed their senior school level. In each of the programmes, the courses have been designed in such a manner so that the students can have basic knowledge about the diversified problems related to rural society. Besides, one course in each semester will provide the students about the practical knowledge of rural society and related problems. Moreover, these field-based courses will give confidence to the students and prepare them for their professional life.

**School of Education:** The curricula developed and implemented by the School of Education at Tripura University are designed to meet the local, national, regional, and global developmental needs. This is reflected in the Programme Outcomes (POs), Programme Specific Outcomes (PSOs), and Course Outcomes (COs) of the programs offered. Here's how each of these components contributes to this relevance:

1. Programme Outcomes (POs):

- **Local Relevance:** The POs aim to equip graduates with skills and knowledge that are directly applicable to the educational needs of the local communities in Tripura and neighboring regions. The curriculum emphasizes understanding the socio-cultural, economic, and educational contexts specific to the region.
- **National Relevance:** The POs are aligned with national educational policies, frameworks, and development goals. This ensures that graduates are prepared to address educational challenges at the national level, including those set out in national initiatives like the National Education Policy (NEP) and schemes like the Beti Bachao Beti Padhao.
- **Regional Relevance:** The programs cater to the regional educational context, addressing the unique needs of the northeastern states of India. This includes promoting inclusive education, addressing language diversity, and

considering the tribal and ethnic communities' educational needs.

- **Global Relevance:** The POs also include an international perspective, preparing students for the global education environment. They incorporate global trends, innovations in education, and international best practices, ensuring that graduates are competitive in a globalized world.

## 2. Programme Specific Outcomes (PSOs):

- **Local Relevance:** The PSOs focus on developing competencies that are particularly important for teaching in the specific context of Tripura and the surrounding regions. These might include knowledge of local languages, cultural nuances, and the challenges faced by schools in the region.
- **National Relevance:** PSOs are designed to ensure that students can contribute to the national educational framework. They address the need for high-quality education, teacher training, and leadership that align with national priorities such as skill development, education for all, and the promotion of STEM education.
- **Regional Relevance:** The PSOs provide a clear understanding of the regional educational challenges, such as issues related to regional disparities in education, lack of infrastructure, and language barriers. The programs offer strategies to overcome these challenges, fostering a strong regional identity.
- **Global Relevance:** PSOs also emphasize the development of educators who can operate effectively in an international education system. They promote awareness of global educational trends such as digital literacy, sustainability in education, and the importance of inclusive and equitable education.

## 3. Course Outcomes (COs):

- **Local Relevance:** Course outcomes focus on practical teaching skills that can be directly applied in the classrooms of Tripura. This includes knowledge of local cultures, pedagogies that resonate with the community, and techniques for overcoming region-specific challenges.
- **National Relevance:** The course outcomes are crafted to ensure that students understand national educational standards and frameworks. They are aligned with the curriculum prescribed by national educational bodies, and they emphasize the importance of preparing students to handle the diverse classroom scenarios present in the country's schools.
- **Regional Relevance:** Specific courses address issues faced by teachers and students in the northeast region, such as multilingual classrooms, inclusive education for



tribal and marginalized groups, and effective teaching strategies for rural areas.

- **Global Relevance:** The COs also equip students with skills and knowledge that are recognized globally. This includes exposure to global teaching methods, cross-cultural competencies, and the integration of technology in education.

**Integration with Developmental Needs:**

The integration of these outcomes with local, national, regional, and global developmental needs is evident in the holistic approach taken by the School of Education. The curriculum:

- **Supports Sustainable Development Goals (SDGs):** Through a focus on quality education (SDG 4), gender equality (SDG 5), and reduced inequalities (SDG 10), the curriculum contributes to the broader global development agenda.
- **Encourages Social and Economic Development:** By preparing teachers who can address the educational needs of underrepresented communities, the programs foster social and economic development in the region.
- **Incorporates Technology and Innovation:** In line with global educational trends, the curriculum incorporates digital tools and innovative teaching methods to prepare graduates to navigate the evolving educational landscape.

**Sociology:** Masters in Sociology comprises of curricula that aims to expose the students to the national and international issues and needs by familiarizing the students to courses such as Sociology of development, Sociology of Tribal society, Environmental Sociology and also develop awareness of gender issues and gender sensitization in course Gender and society. The courses such as Fieldwork: Practical + Report writing, Social entrepreneurship and courses related to research and theories provides the resources and knowledge required to develop skills and carry out research to analyse various aspects of social reality.

**Physics:** The curriculum has been framed incorporating different branches of physics giving special emphasis on multidisciplinary areas in coherence with local, regional, national and global importance.

**Material Science & Engineering:** The curricula developed and implemented has relevance to the needs of national and global developmental needs. The knowledge and development of materials for advanced applications in the area of energy, nuclear and defence industries is of paramount importance. The curriculum of MTech, in Material Science

and Engineering is designed so that the student can be equipped with knowledge of different materials such as metals, ceramic, polymers, composites and their properties for engineering applications.

The curriculum is designed with the following programme specific outcomes

- a) Develop core competency in fundamental understanding of materials and their properties.
- b) Analyse, design and evaluate materials for engineering applications.
- c) Solving engineering problems using the domain knowledge of materials.
- d) Enabling student to work individually or in a group and under supervision for research and development activities with high professional and ethical standards.

At the end of the course the student is well equipped in understanding different materials, their properties and applications. Also, sufficient training is imparted to develop innovating problem-solving skills, efficient use of materials and resources, reusability and recycling of materials.

Each course with its individual character of gaining the specific domain knowledge is also well aligned with the overall programme objectives and outcomes.

**Molecular Biology & Bioinformatics:** The M.Sc. program in Molecular Biology and Bioinformatics at Tripura University is meticulously designed to address local, national, regional, and global developmental needs. It integrates core scientific principles with practical applications, preparing students for diverse challenges in academia, industry, and research. The curriculum emphasizes Programme Outcomes (POs), Programme Specific Outcomes (PSOs), and Course Outcomes (COs), fostering a holistic and multidisciplinary education.

Response:

Relevance to Developmental Needs:

1. Local Needs: The program addresses pressing local issues, including health and agriculture, through courses on microbial genetics, recombinant DNA technology, and tissue culture. These areas are pivotal for advancing healthcare diagnostics and crop improvement in resource-constrained regions like Tripura.
2. National and Regional Needs: The curriculum includes modules like genomics, proteomics, and structural bioinformatics, aligning with India's goals to advance biotechnology and bioinformatics for pharmaceutical and industrial applications. Emphasis on genomics and proteomics supports national initiatives in personalized

medicine and biotechnology.

3. Global Needs: Global challenges such as drug resistance and infectious diseases are tackled through subjects like immunology, molecular modelling, and biophysical techniques. The integration of computational biology prepares students to engage in international collaborative research and adapt to technological advancements.

Programme Outcomes (POs):

Graduates are equipped with a deep understanding of molecular and computational biology, analytical problem-solving skills, and ethical practices in research. These attributes enable them to contribute effectively to societal and scientific progress.

Programme-Specific Outcomes (PSOs):

The PSOs focus on enabling students to:

- Analyze biological data using bioinformatics tools.
- Design experiments to explore molecular interactions and cellular processes.
- Apply knowledge in recombinant DNA technology for developing biotechnological solutions.

Course Outcomes (COs):

Each course within the program is designed with specific outcomes:

- Core courses, such as "Cell Biology" and "Molecular Biology," ensure foundational knowledge.
- Laboratory courses provide hands-on skills in biochemistry, rDNA technology, and computational tools.
- Electives like "Tissue Culture and Animal Cloning" and "Bioinformatics: Genomics and Proteomics" allow for specialization and practical expertise.

Interdisciplinary and Practical Approach:

The curriculum integrates theoretical knowledge with experimental techniques, including molecular modelling, genomics, proteomics, and bioprocessing. Students gain exposure to advanced methodologies, fostering innovative solutions for real-world problems.

Research and Innovation:

The project component emphasizes critical thinking and independent research, enabling students to contribute to advancements in molecular biology, bioinformatics, and related fields. Collaboration with industrial and academic institutions ensures that students are well-versed in contemporary research methodologies.

In conclusion, this program is a comprehensive educational framework addressing scientific and societal needs. It empowers students to advance knowledge, drive innovation, and contribute to sustainable development in diverse sectors globally.

## Chemical & Polymer Engineering:

### Programmes objectives

Keeping in view the entire scientific and technological development of the student through covering almost all the courses, the M. Tech. and Ph.D. in Chemical and Polymer Engineering programmes have been designed. The present programmes aim to train the students to acquire high-level theoretical and experimental knowledge in the technology direction through learning the designed courses with high quality and significance. However, the main objectives of the programmes are as follows:

- To impart education and training in the fields of Chemical & Polymer Engineering to make the students capable enough to address sustainable and novel research solutions.
- To prepare the students to outshine in academics and research in different motifs of Chemical & Polymer Engineering.
- To train the students with good theoretical and practical knowledge to comprehend, analyse, design, and create novel products and solutions for real-life problems.
- To inspire and motivate the students to take laboratory-based innovations to the market through various entrepreneurial development activities.
- To acquire high-end industry-centric skills in Chemical & Polymer Engineering.
- To provide the knowledge of various new techniques by which the students can lead the cutting-edge technologies.
- To provide students with an academic environment aware of excellence, leadership, written ethical codes and guidelines, and the life-long learning needed for a successful professional career.
- To prepare the students with excellent communication skills, capable of communicating effectively in various contexts, thus sharing new knowledge with other researchers from other institutions, universities and also industrialists.
- To coach students in professional and ethical attitude, effective communication skills, teamwork skills, a multidisciplinary approach, and an ability to relate the taught subjects to address environmental issues.

## Programme Outcomes

PO1: Knowledge about Technology: Graduates will have an advanced knowledge of fundamental areas of chemical & polymer engineering, such as Heat & Mass Transfer, Advanced Reaction Engineering, Polymer Science & Technology, Rubber Science & Technology etc. and henceforth will be able to solve chemical and polymer engineering problems.

PO2: Planning Abilities: Graduates will be able to communicate ideas, demonstrate efficient planning including time management, resource management and organization skills, reason critically and exercise independence of mind and thought in conducting research.

PO3: Problem analysis ability: Graduates will be able to apply a scientific attitude to analyse the society's problems and to apply information systematically for the solution. They will have a holistic approach in solving problems and designing systems by applying professional engineering judgment, particularly where there is technical uncertainty and determine process feasibility and viability of the chemical & polymeric processes with respect to economic aspects, environmental safety and social aspects etc.

PO4: Modern Tool usage: Graduates will be able to handle new techniques and advanced tools like DSC, FTIR, FESEM, UV Spectrophotometer etc

PO5: Leadership Skills: Graduates will be able to have leadership skills with high regard for ethical values and social responsibility through the effective use of flexible CBCS-based courses making them eligible to take management-related courses.

PO6: Professional Identity: Graduates will be able to show professional identity as competent technologists at national and international levels.

PO7: Technology and society: Graduates will develop an understanding of how to undertake research, design & development in cutting-edge areas, inculcating ethical practices with independent intellectual skill, courage, integrity and sensitivity to the social aspects of society.

PO8: Communication: Graduates will possess effective communication skills, teamwork skills, a multidisciplinary approach, and an ability to relate their course subjects to address environmental issues.

PO9: Environment and sustainability: Understanding about environment sustainability and pollution control through laboratory practices.

PO10: Life-long learning & progression: The graduates will possess the knowledge of contemporary issues and the ability to engage in life-long learning of new innovative technologies in chemical/polymer and allied fields and pursue advanced studies.

**Electrical Engineering:** The curricula at Department of Electrical Engineering in Tripura University (A Central University) has been consciously developed by considering local, national, regional and global development needs so that the students are equipped with foundational knowledge, industry relevance electives and exposure in internship and project work. The M.Tech program in Electrical Engineering is crafted to meet local, national, regional, and global social developmental needs, equipping students with advanced knowledge, practical skills, and research capabilities. It ensures graduates are well-prepared to address pressing challenges, drive innovation, and contribute to technological, environmental and societal progress at multiple levels.

Local, National, and Global Social Development through Electrical Engineering Course

Local Development

The program emphasizes practical solutions tailored to local challenges. Courses like Renewable Energy Sources and Power Generation: Subjects like Solar Energy Technology and Microgrid Design help in developing small-scale solar and wind power projects. These are essential for rural electrification and empowering underserved areas with reliable electricity.

Distribution System Engineering: Topics like Load Flow Analysis and Fault Analysis support the enhancement of local power distribution networks, minimizing outages and improving service reliability.

National Development

National progress relies on large-scale implementation of Electrical Engineering innovations:

1. Modern Power System and Power System Simulation Lab: Courses like *Load Frequency Control* and *Voltage Stability* ensure reliable grid operation, critical for a nation's industrial and economic growth.
2. Power Electronics Converters and Power Electronics Lab: Subjects like *AC-DC Converters* and *DC Drives* enable industries to adopt modern, energy-efficient machinery, fostering sustainable industrialization.
3. Smart Grid: Topics like *Smart Metering* and *Grid Modernization* contribute to developing advanced power grids that reduce energy losses, enhance security, and ensure better energy management across the nation.

## Global Development

Modern Control Systems: Knowledge of *Z-Transform* and *Discrete-Time Control Systems* facilitates the design of control systems used in international aviation, robotics, and global manufacturing hubs.

Integration of Renewable Energy: Topics like *Hybrid Energy Systems* and *Distributed Generation* support global projects integrating solar, wind, and other renewables into energy systems, ensuring clean energy solutions worldwide.

Power System Protection is a critical domain of Electrical Engineering that ensures the reliable operation of power systems by safeguarding equipment, minimizing damage, and maintaining system stability during faults or abnormal operating conditions.

## Social Development

Mini project, Design Project and Term Paper Leading to Thesis and Thesis Work emphasizes independent research, culminating in high-quality, publishable findings giving solution for social Development. By integrating foundational knowledge, practical exposure, and research-oriented training, the Electrical Engineering curricula at Tripura University enable students to become agents of change, addressing developmental needs at local, national, and global levels.

By addressing local needs, supporting national energy policies, and contributing to global sustainability, Electrical Engineering aligns closely with development goals. It plays a pivotal role in creating a future that is technologically advanced, environmentally sustainable, and socially equitable. Institutions like Tripura University, through their tailored curricula, equip students to drive this alignment and lead innovations that meet these development objectives.

**Forestry and Biodiversity:** The curricula developed for the M.Sc. Forestry and Biodiversity programme have great relevance to the local, regional and global development needs of the present scenario. At the end of the course, student would be capable to review research literature, analyse problems and formulate research proposals to taking up research as a career. They can communicate in both oral and written form of the forestry knowledge base activities and the use of biological resources by demonstrating professional ethics. Students can also undertake field based surveys related to the conservation, utilization and sustainable management of Forest and other NTFP's. They can understand the advancements and use the modern tools by applying forestry and biodiversity principles; choose career options in environmental NGO's, Forest based

industries, Administrative services of ministries dealing with Forest and environment, independent consultant, or entrepreneur with the knowledge of forest resource utilization and management.

**Human Physiology:** The Department of Human Physiology has developed and implemented the curriculum aligned with the local, national, regional, and global developmental needs, ensuring that the educational outcomes reflect these needs. The Programme Outcomes (POs), Programme Specific Outcomes (PSOs), and Course Outcomes (COs) are essential components that contribute to this alignment. Here's how they have been framed:

**Programme Outcomes (POs)**

These outcomes ensure that the overall educational program in Human Physiology equips students with the skills and knowledge necessary to meet local, national, regional, and global challenges in healthcare and scientific research.

Example POs for a Human Physiology program may include:

1. Basic Scientific Knowledge
2. Critical Thinking
3. Communication Skills
4. Ethical Awareness
5. Interdisciplinary Collaboration

**Programme Specific Outcomes (PSOs)**

These are more specific to the Human Physiology discipline and reflect how the curriculum meets the needs of the field:

1. Applied Physiology Skills
2. Innovative Research
3. Health Promotion and Disease Prevention

**Course Outcomes (COs)**

Course outcomes define the specific learning objectives for each course within the program. These should reflect the program's broader goals while addressing specific aspects of physiology:

1. Human Body Systems Understanding
2. Laboratory Techniques
3. Health Informatics
4. Global Health Perspectives
5. Clinical

**Relevance to Developmental Needs:**

1. **Local Needs:** The curriculum is focused on addressing health challenges specific to the local population, such as endemic diseases, nutrition-related disorders, and healthcare accessibility.
2. **National Needs:** On a national level, the curriculum could emphasize key health issues such as non-communicable diseases, mental health, and healthcare system strengthening.



3. Regional Needs: The program could focus on health concerns that transcend national borders, like air pollution, waterborne diseases, or regional epidemic preparedness.
4. Global Needs: On the global scale, graduates will be prepared to tackle global health challenges like pandemics, aging populations, and global health inequalities. The curriculum could integrate global health policies, sustainable health practices, and collaborative international research efforts.

### **Electronics & Communications Engineering:**

#### Program Outcome (POs) :

The Program Outcomes (POs) for the M.Tech program in Electronics and Communication Engineering are designed to ensure holistic development and technical expertise among graduates. These outcomes include:

1. Advanced Knowledge Application: Ability to apply advanced mathematics, science, and engineering principles to solve complex problems in electronics and communication engineering.
2. Research and Innovation: Proficiency in designing and conducting experiments, analyzing data, and developing innovative solutions for real-world challenges through interdisciplinary research.
3. Technical Expertise: Mastery in modern engineering tools, techniques, and methodologies for the design, analysis, and development of electronic systems and communication networks.
4. Problem Solving: Capability to identify, formulate, and solve intricate engineering problems with a focus on optimized and sustainable solutions.
5. Emerging Technologies: Knowledge and application of emerging technologies, such as IoT in addressing contemporary engineering challenges.
6. Project Management and Leadership: Ability to manage projects effectively, demonstrate leadership, and work collaboratively in multidisciplinary teams to achieve organizational goals.
7. Ethics and Social Responsibility: Commitment to ethical practices, understanding of societal and environmental impacts, and contribution to sustainable development through engineering solutions.
8. Effective Communication: Proficiency in conveying complex technical ideas clearly and effectively through oral, written, and graphical means.
9. Lifelong Learning: Engagement in lifelong learning and professional development to adapt to the evolving demands of the industry and advancements in technology.
10. Global Competency: Understanding of global trends and the

ability to apply engineering knowledge in a global, economic, and societal context.

11. Design and Development: Expertise in designing, developing, and optimizing advanced communication systems, electronic circuits, and embedded systems with an emphasis on reliability and efficiency.

12. Data Analysis and Decision Making: Ability to utilize advanced computational and analytical skills for decision-making in complex engineering scenarios.

These outcomes ensure that graduates are equipped with the technical skills, ethical grounding, and innovative mindset required to excel in academia, research, and industry roles in Electronics and Communication Engineering.

#### Programme Specific outcomes (PSOs)-

PSO1: Train students with knowledge relevant to current global standards to meet the challenges of Electronics and Communication Engineering.

PSO2: Promote understanding of basic Electronics & Communication Engineering.

PSO3: Disseminate basic and advance knowledge in the areas of Electronics and Communication system research.

PSO4: Enable students to strive for higher professional achievements in communication engineering, entrepreneurship as well as academic sector.

PSO5: Develop effective scientific and /or technical communication skills (both oral and writing)

#### Course Outcome:

The courses like Advanced Optical Fiber Communication System equip students with knowledge about optical fiber structures, communication systems, impairments, and performance monitoring, including advanced modulation formats. Similarly, Advanced Microwave Engineering focuses on analyzing wave propagation modes, designing microwave components, and understanding the principles and operations of both passive and active devices, alongside mathematical analysis and parameter measurements. The programming course covers languages like Java, Python, C, and C++, enabling students to grasp basic concepts such as operators, classes, and inheritance while advancing to event handling, database connectivity, and application design.

The Optical Communication Lab provides hands-on experience with optical fibers, including components, splicing, simulation in OCTAVE/MATLAB, and OTDR usage. The RF and CAD Project Lab emphasizes analyzing the characteristics of microwave sources, components, and antennas, as well as measuring radiation patterns and antenna gain.

Courses like Optical Networks delve into fiber structures, channel impairments, coupling losses, and system design considerations. Advanced Antennas & Radiating Systems focus

on defining antenna parameters, analyzing radiation patterns, and evaluating antennas for specific specifications. The Internet of Things (IoT) course introduces students to IoT concepts, communication protocols, real-time communications, and IP addressing, including IPv4 and IPv6.

Research-oriented activities form a core part of the curriculum. Research Methodology teaches effective communication, technical writing, and publishing ethics, ensuring students can efficiently write theses and research papers for journals and conferences. Project Design exposes students to emerging trends and technologies, fostering skills in interfacing, project documentation, and feasibility studies. The Dissertation Phases I & II and Thesis Seminar Interim & Viva-Voce guide students through problem formulation, research, design proposals, and thesis creation, culminating in presentations and viva-voce sessions to effectively communicate their findings. Overall, the program emphasizes a blend of theoretical understanding, practical application, and research excellence to prepare students for advanced careers in engineering and technology.

**Information Technology:** The department provide in house 3 specific programs which are PhD in Information Technology (IT), Master of Technology (M.Tech) in Information Technology (IT) and Master of Computer Applications (MCA). The Program Specific Outcomes (PSOs) are different for all the three (03) in house programs.

- The PhD in IT PSOs deal with the student being able to: Design, develop, implement, integrate and administer IT-based innovative solutions the solution of real-life computing problems using present day technologies (PSO-1); Synthesize and evaluate models for IT for data analysis, via various hardware and software solutions for solving real life problems (PSO-2); Show technically sound expertise in communicating both orally and in written form to demonstrate research ideas, innovations with professional ethics and the concerns for social causes (PSO-3) and To engage in future subordinates and students in research activities to innovate and carry out research in various fields of Information Technology (PSO-4) after the award of PhD in IT.
- The M. Tech in IT PSOs deal with the student should being able to: Design, develop, implement, integrate and administer IT-based solutions of real-life computing problems using current and emerging, contemporary technologies (PSO-1); Synthesize and evaluate models for IT management, demonstrate data analysis skills, manage the various aspects of an IT organization, for effective

interpretation and decision making to solve real life problems (PSO-2); Show expertise to communicate in both oral and written forms, demonstrating the practice of professional ethics and the concerns for social welfare using accepted standards and best practices (PSO-3) and To engage in research and development activities to ideate, innovate and carry out research and education in the fields of Information Technology (PSO-4) on completion of the course and award of M.Tech in IT.

- The two (02) years MCA PSOs deal with the student being able to: Express the global expertise in the field of technological planning and development of software applications in the usage in this modern era (PSO-1); Show expertise to communicate in both oral and written forms, demonstrating the practice of professional ethics and the concerns for social welfare (PSO-2); Ability to enhance and develop techniques for independent and lifelong learning in computer application (PSO-3) and Acquiring In-depth knowledge & sustained learning leading to innovation, permutation, modernization and research to fulfil global interest (PSO-4) on completion of the course and award of Master of Computer Application PG degree.

These PSOs of all the three programs are oriented with respective Course Outcomes (COs) of various courses offered in the respective programs are oriented to achieve the respective PSOs of the program of which they are listed.

**Geography & Disaster Management:** To enable the students to gain expertise in the use of Remote Sensing data (Satellite images) and GIS software for mapping. To enhance the student's proficiency in analysing data quantitatively with the use of statistical techniques. Further, to promote the skill on the use of field-based survey instruments and to develop the leadership quality to conduct field studies individually focusing on contemporary issues.

**Chemistry:** The Chemistry Department at Tripura University ensures its curriculum aligned with local, national, regional, and global developmental needs, reflected in its Programme Outcomes (POs), Programme Specific Outcomes (PSOs), and Course Outcomes (COs). The curriculum has been framed incorporating different branches of chemistry giving special emphasis on multidisciplinary areas in coherence with local, regional, national and global importance.

**Programme Outcomes (POs):** The POs emphasize providing a strong foundation in chemical sciences, fostering critical thinking, problem-solving, and research skills. The integration of sustainability and green chemistry addresses pressing

environmental concerns at both national and global levels. Programme Specific Outcomes (PSOs): The PSOs focus on specialized fields such as material science, medicinal chemistry, and environmental chemistry to meet regional and national demands. Training in advanced techniques and instrumentation prepares students for industry and research roles.

Course Outcomes (COs): The COs emphasize hands-on training, research-oriented learning, and interdisciplinary approaches to bridge academic knowledge with practical applications. Courses in inorganic chemistry, organic chemistry, and physical chemistry prepare students to address global challenges responsibly.

This curriculum equips students with knowledge, skills, and ethical responsibility to contribute to regional and global scientific advancement, ensuring societal impact and career readiness.

**Pharmacy:** The Department of Pharmacy offers an M.Pharm (Master of Pharmacy) program with a specialization in Pharmaceutical Chemistry, following the curriculum prescribed by the Pharmacy Council of India (PCI). Designed and regulated by the PCI, this curriculum provides a standardized framework for academic and professional development. It ensures that M.Pharm graduates specializing in Pharmaceutical Chemistry are equipped with comprehensive theoretical knowledge, practical skills, and research expertise, enabling them to make meaningful contributions to the field of pharmaceutical sciences.

#### 1.1.Relevance of Pharmacy Curricula to Local, National, Regional, and Global Needs:

Our curriculum integrates local, national, regional, and global perspectives, ensuring that graduates are versatile and adaptable. It supports community-specific healthcare delivery, aligns with national economic and health priorities, promotes regional cooperation for shared health goals, and equips graduates to address global challenges in pharmaceutical sciences and healthcare.

At the local level, our curriculum emphasizes training pharmacists to deliver patient-centric care for prevalent health issues, equipping graduates with expertise in local pharmacy laws and operations, and encouraging research into traditional medicinal plants and indigenous systems like Ayurveda, Unani, and Siddha to address local cultural and healthcare needs.

National relevance in our curriculum involves aligning the curriculum with healthcare policies like the National Health Mission to improve access to affordable medicines, supporting the "Make in India" initiative through training in

pharmaceutical manufacturing and innovation, addressing public health challenges such as antibiotic resistance and vaccine accessibility, and providing expertise in national drug regulatory standards to ensure compliance and quality assurance.

At the global level, our curriculum aligns with universal health goals and international standards by training pharmacists to advance equitable healthcare access under WHO frameworks and SDGs, preparing students for careers in multinational pharmaceutical companies through modules on GMP, regulatory affairs, and international pharmacopoeias, fostering expertise in cutting-edge fields like personalized medicine and nanotechnology to meet innovation demands, and equipping graduates to tackle global health challenges such as pandemics, AMR, and vaccination programs.

**Computer Science Engineering:** The curricula at Department of Computer Science and Engineering in Tripura University (A Central University) has been consciously developed by considering local, national, regional and global development needs so that the students are equipped with foundational knowledge, industry relevance electives and exposure in internship and project work. The M.Tech program in Computer Science and Engineering is crafted to meet local, national, regional, and global developmental needs, equipping students with advanced knowledge, practical skills, and research capabilities. It ensures graduates are well-prepared to address pressing challenges, drive innovation, and contribute to technological and societal progress at multiple levels.

**Local Development:**

The program emphasizes practical solutions tailored to local challenges. Courses like Wireless Communication & Mobile Computing focus on optimizing wireless networks for local deployment, improving connectivity, and addressing energy efficiency. Digital Forensics creates awareness about cybersecurity, emphasizing personal data protection and combating cyber fraud, vital for local communities and small-scale enterprises.

**National Development:**

The curriculum addresses national priorities such as data security, ethical research, and innovation. Courses like Network Security & Cryptography and Information Security and Privacy train students to secure critical national infrastructures and combat cyber threats. Big Data and Data Science prepares students to manage and analyze large datasets, contributing to national advancements in healthcare, governance, and industry.

## Regional Development:

Regional challenges are addressed through scalable and distributed solutions. Distributed Computing and IoT Applications and Communication Protocols enable students to design smart city solutions, optimize industrial automation, and develop systems tailored to regional needs. Courses like Technical Communication and Workshops & Seminars encourage collaboration, facilitating the dissemination of knowledge and innovations across regions.

## Global Development:

Global challenges are tackled through courses like Machine Learning and Image Processing and Big Data and Data Science, equipping students with skills in AI, data analytics, and predictive modeling. The program emphasizes interdisciplinary research, enabling students to produce high-quality, globally relevant research through Thesis Reports and Seminars.

## Key Learning Outcomes:

- **Comprehensive Knowledge:** Students gain a strong foundation in algorithms, wireless communication, and cryptography, critical for solving complex global challenges.
- **Innovation and Research:** Independent research through thesis work enables students to innovate and contribute to advancements in computer science and engineering.
- **Lifelong Learning:** Emphasis on ethics, collaboration, and self-directed learning prepares students to stay relevant in a rapidly evolving technological landscape.

## Core Courses and Contributions:

- **Design & Analysis of Algorithms** teaches complexity analysis and optimization techniques.
- **Machine Learning and Image Processing** provides expertise in AI applications and image analysis.
- **Big Data and Data Science** focuses on scalable analytics techniques and predictive modeling.
- **Term Paper and Thesis Work** emphasizes independent research, culminating in high-quality, publishable findings.

## Alignment with Development Goals:

The program aligns with sustainable development goals by:

- **Enhancing technological infrastructure** and addressing local challenges.
- **Strengthening national cybersecurity frameworks** and advancing data management.
- **Driving regional advancements** in IoT, distributed systems, and automation.

Preparing graduates to address global challenges in AI, data

science, and sustainable computing.

**Statistics:**

**Programme Outcomes (POs):**

Students having degree in M.Sc. (Statistics) should have knowledge and expertise of various concepts and fundamentals of Statistics and ability to apply this knowledge in several fields of academia, administration and industry. The students may pursue their carrier in the field of Statistics and allied subjects research.

**Programme Specific Outcomes (PSOs) :**

After completing M.Sc. (Statistics) the student should have

- Knowledge of different theorems, principles, concepts, methodologies, tools and techniques (skills) of Statistics
- Ability to do data collection, tabulation, and representation through graphically and mathematically, analysis and interpretation by using appropriate statistical tools.
- Ability to identify and solve several statistical real life problems of research and industry.
- Familiarity with various computational techniques and statistical software including programming languages (i.e., R , Python) for statistical computation.
- Capability to use appropriate statistical techniques in different interdisciplinary areas, like health, agriculture, finance, PSUs, telecommunications and bio-statistics.

**Course Outcomes (COs) :**

- Ability to compete with industrial and private sector research and official demand of data analysis, marketing survey and pursue their career in the field of advanced and modern statistics.
- Ability to develop original thinking of formulating new problems and providing respective solutions to pursue higher studies and research in the field of statistics and allied subjects.

Ability to address several real-life unsolved problems by developing of new statistical models and generate different ideas of start-up to built up nations' development.

**CCSEIP:**

Post Graduate Diploma in Tribal and Ethnic Studies

PSO-01: Identify various aspects of traditional life of tribal people in India, and understand tribal life of Northeast India as a part of tribal situation in the country.



PSO-02: Explore the culture of the tribes and ethnics communities in Tripura; understand their relation with both social and physical environment; and understand the development issues and problems of tribal and ethnic communities in Tripura.

PSO-03: Impart concepts of tribal economy and tribal ecology; know the interrelationship between economy and ecology; and understand the crisis emerging out of incompatible relations between economy and ecology.

PSO-4: Identify, explore and study diseases and curative practices followed in tribal and ethnic communities; and Know various schemes and programmes of the government for health care of people in general and tribal and ethnic groups in particular.

PSO-05: Appraise students with policies and approaches to tribal development in India; study the constitutional provisions and institutional framework for tribal development and know the various problems faced by tribal and ethnic communities in the process of development.

PSO-06: Apply the theoretical knowledge in field situation and in writing the dissertation, promote at least 15 days placement in any one of the Government Organizations or NGO like, Tribal Research Institute (TRI), Gram Panchayat, Panchayat Samity, Zilla Parishad, Community Block, DRDC, NGDO, CBO Etc. to acquire knowledge about tribal development and administration through active participation.

PSO-07: The Centre is a pioneer in introducing PGDTES course in the NE region.

Ph.D. in Social Exclusion and Inclusive Policy:

PSO-01: Producing high quality research on social and economic issues concerning disadvantaged and marginalized sections of society

PSO-02: Sensitizing issues on discrimination, deprivation, exploitation and exclusion through research.

PSO-03: Exploring ways and means for electing social justice, equity, fair play and inclusion in Indian society in general and North-Eastern societies in particular through research in the stated areas.

PSO-04: Facilitating empirical research results and action research through the Centre to create an ambience of social inclusion, irrespective of caste, clan and religion.

