

A COMPREHENSIVE TRAINING POLICY FOR TECHNICAL TEACHERS

HANDBOOK ON TECHNICAL TEACHER TRAINING MODULES



All India Council for Technical Education

(A STATUTORY BODY OF THE GOVT. OF INDIA)
(Ministry of Human Resource Development, Govt. of India)
Nelson Mandela Marg, Vasant Kunj, New Delhi-1 10070

A Comprehensive Training Policy
for Technical Teachers

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MODULE 1

ORIENTATION TOWARDS TECHNICAL EDUCATION AND CURRICULUM ASPECTS

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Content Duration	:	40 hours

1.1. Rationale

The bridge from human resource development to economic growth has to be built by well trained teachers. The most important ‘agent of change’ in ‘Knowledge Society’ is the teacher. The twenty first century presents a radically different economy and society, which is likely to have profound implications on Technical Education and Training. The Technical education system must adapt to the key features which include Globalization & Sustainability, ICT Revolution, Emergence of Knowledge Society and Rapid Knowledge Obsolesces.

There is at least one generation gap between the Learners and the Teachers. There is a shift from teacher-centered to learner-centered paradigm and the new roles of teacher, learner, curricula and new media need to be understood. A teacher requires many educational and didactical skills to deal with new situations. These are a) Knowing subject matter deeply b) Learning to learn Skills c) A large knowledge of digital educational tools. d) How to be a facilitator and motivator of learning environment. Teachers must be curriculum leaders. Ensuring that teachers are central to the reformation of curriculum will enable the development of pedagogy that provides the most favourable condition of learning and the highest quality learning outcomes for all students

The new role of teachers demands a new way of thinking and understanding of the new vision of the learning process. There is enough evidence in different fields of educational practice to understand that learning does not happen in the absence of teacher expertise in what to teach and how to teach it. Strong formal teaching and learning, aided by various educational technologies and premised on an up-to date understanding of the vocational, technical and professional field of practice is what is ‘good enough’ for Technical education.

This course “Orientation towards Technical Education and Curriculum aspects” delivers necessary foundations for shaping teacher education and refining the role of teachers and learners in the new, independent and engaging environment that has been created for them. “Orientation towards Technical Education and Curriculum aspects” is an online SWAYAM course specially designed and



developed for the AICTE Technical Teacher Training Module. The course is structured to provide interactive MOOC learning experience to the faculty members and empowers the teachers with the sound knowledge of technical education system, criteria for quality, teaching and learning process. It also provides an understanding of curricular aspects, its approaches, implementation, monitoring and evaluation.

1.2. Units

UNIT NO.	UNIT TITLE
1	Orientation towards Technical Education
2	Three Domains of Learning
3	Instructional Objectives and Learning Outcomes
4	Psychology of Learning and Instruction
5	Learner Characteristics and Student Motivation
6	Alternative modes of Learning
7	Aspects of a Curriculum
8	Curriculum Implementation, Monitoring and Evaluation

1.3. Module Outcomes

- Identify the issues and challenges in the domain of technical education, especially concerning quality.
- Formulate Instructional Objectives at different level of cognitive, psychomotor and affective domains using Revised Bloom's Taxonomy
- Apply the principles of learning in teaching learning process
- Interpret the psychological characteristics of adolescent learners to use the relevant motivational techniques
- Interpret the aspects of curriculum for effective implementation for predetermined outcomes.

1.4. Contents

1.4.1. Orientation towards Technical Education

This unit explains the structure of technical education system in the country. It also explains the role and functions of National agencies like MHRD, AICTE, UGC, DTE, NITTTRs, ISTE. The quality in education system has been defined and the knowledge on application quality models like ABET, NAAC, NBA, ICAR, DEC has been provided.

Structure of Technical Education System- Formal, Informal and Non formal Education- Types of Technical Institutes – ITIs, Polytechnics, Engineering colleges, Universities, INI - National Agencies – MHRD, AICTE, UGC, NITTTR, DTE - Quality in Higher Education -Models and Criteria - NBA, NAAC - Excellence in Technical Education.

1.4.2. Three Domains of Learning

Learning can occur in three domains such as Cognitive, Affective and Psychomotor. Each domain is explained using a taxonomy. The Revised Bloom's taxonomy with two dimensions of Cognitive Processes dimension and Knowledge dimension is used for writing well defined instructional objectives.

Domains of Learning - Cognitive, Affective and Psychomotor - Revised Bloom's Taxonomy - Cognitive Processes dimension and Knowledge Dimension.

1.4.3. Instructional Objectives and Learning Outcomes

Instructional objectives serve as signpost for teachers by giving direction in the selection of methods and instructional resources, assist students in organizing and studying the content material and guide them what is expected from them and provide scope for the Question paper setter.

Goals and Objectives, Mager's Behavioral Objectives and Gronlund's General and Specific Cognitive Objectives- Writing well defined Instructional Objectives- Mapping the Objectives in Two dimensional Matrix of Knowledge Dimension and Cognitive Process- Writing Learning outcomes.

1.4.4. Learning and Instruction

The knowledge of psychology of Learning and Instruction is very useful in making the teaching learning process, interesting, inspirational and effective. Teaching is defined as an interactive process, primarily involving classroom talk which takes place between teacher and student and occurs during definable activities, thereby resulting in Learning.

Basics of Psychology of Learning and Instruction –Pedagogy, Andragogy, Teaching, Training, Learning; Teaching Learning Process - Basic Teaching Model, Factors Influencing Learning, Transfer of Learning, Laws of Learning, Principles of Teaching and Learning.

1.4.5. Learner Characteristics and Motivation

Entering Behavior describes the student's level before the instruction begins. It refers to what the student has previously learned, his intellectual ability and development, his motivational state and certain social and cultural determinants



of his learning ability. To be precise, they are human ability, individual differences and readiness.

Learner Characteristics – Personality, Learner Characteristics, Students Types, Student Problems -Four pillars of learning proposed by UNESCO- learning to know, learning to do, learning to be and learning to live together Student Motivation -Definitions of Motivation -Theories of Motivation-Intrinsic Vs Extrinsic Motivation -Types of Motivation -Functions of Motivation -Causes of Demotivation (Students)- Factors in Identification of Demotivated Students, Four Motivational Functions, Six Factors for Improving Student Motivation, Characteristics of Motivating Teachers - Strategies of Motivation.

1.4.6. Alternative modes of Learning

Teacher has to inculcate the higher order thinking skills and 21st century learning and innovation skills such as Creativity, Critical thinking and problem solving, Collaboration and communication. The teacher has to ask students to analyze, synthesize, or apply material, both during lectures and in assignments, encourage effective collaboration, increase student investment, motivation, and performance.

Role of Teacher in 21st Century, Millennial Learners – Learning Principles, Introduction to Multimedia Learning, e-learning, Blended Learning and Flipped Learning, Active Learning strategies.

1.4.7. Aspects of Curriculum

Curriculum is the heart of any educational system. The curriculum consists of both the plans for learning and the actual delivery of those plans. Curriculum includes series of planned instruction that is coordinated and articulated in a manner designed to result in the achievement by students of specific knowledge and skills and application of this knowledge.

Concept of curriculum- Attributes of Curriculum -Types of Curriculum - Interpreting the Curriculum -Teacher and curriculum - Curriculum and Instruction - Co-curricular and Extra curricular

1.4.8. Curriculum Implementation, Monitoring and Evaluation

Teachers who are able to differentiate between various aspects of curriculum materials, who are well practiced in thinking about curriculum potential, may be better equipped to make professional decisions about the way materials could be used in diverse educational situations Steps involved in the Process of Curriculum Development- Curriculum Implementation – Monitoring and Evaluation - Need for co-relating knowledge to professional practice, research & development

1.5. Reference

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MODULE 2

PROFESSIONAL ETHICS AND SUSTAINABILITY

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Content Duration	:	40 hours

2.1. Rationale

Professionals are required to practice value-based ethical behaviour in their professional and personal lives to achieve perpetual prosperity and happiness for maximum possible number of people. However, appropriate professional behaviour is possible only when professionals have a clear understanding of self and appreciation of importance of working with harmony at various level of existence. Professionals are also supposed to take care of social issues and environmental protection while working for economic development and well being of their clients. This module therefore, attempts to develop understanding that for achieving perpetual prosperity and happiness in life, it is important to accept the concept of co-existence and need of harmony at different levels of existence such as self, family, society and nature. This understanding is more required for professionals as compared to other occupations and therefore this module strives to explain that what makes professions different from other occupations.

In this context it is important that appreciation for values, professional ethics and sustainability should become necessary component of any professional education. For this to happen, it is essential that teachers in professional education system themselves first understand the importance of universally accepted values and the need of self exploration as the process for value education and for appreciation of ethics. It is also important for teachers to show value-based and ethical professional behaviour so that they may become role models for the students and hence expected behaviour from a teacher as professional is also discussed in this module.

Environment Conservation is also one of the essential condition for perpetual prosperity and happiness of not only future generations but even of this

generation. Therefore, the foremost professional responsibility of teachers is that they should develop desired knowledge, skills and attitudes for environment protection in the UG students who would be professionals on graduation. It is in this regard that the concept of sustainable development with reference to importance of development for poverty alleviation and its side effects on environment is explained in this module. Special approaches to be adopted for sustainable development to ensure environment protection and energy conservation are also emphasized.

Since the professionals are at the top of their professions, they are expected to self-regulate themselves, for which the role of professional societies is also highlighted in this module.

The learning effort required by the teachers for this module is 40 hours, which will include studying the e-content and related videos, completing activities and assignments. The process of completing activities and assignments, participating in discussion forums and taking the tests will further clarify the concepts.

Hope the teachers will find module thought provoking and motivating for ethical professional behaviour leading to emotional and ecological wellbeing along with economic well being of all.

2.2. Units

UNIT NO.	UNIT TITLE
1	Technical Teachers as Professionals
2	Human Realities and Essentialities of Values and Skills
3	Development of Professional Values, Attitudes and Ethics
4	Sustainable Development
5	Approaches for Sustainable Development

2.3. Module Outcomes

- Demonstrate the actions by technical teachers as professionals in establishing the “Guru-Shisya Parampara’ in present context.
- Establish the interdependence among the concepts of ‘harmony at different levels’, ‘coexistence’ and ‘Sarve Bhavantu Sukhinah’
- Suggest with justification, ways and means for ensuring ethical behaviour by teachers.
- Interpret the concept of ‘sustainable development’ with reference



to 'need of development for poverty alleviation' and 'impact of development on panch tatavas.'

- Demonstrate appropriate approaches and techniques for sustainable development.

2.4. Contents

2.4.1. Technical Teachers as Professionals

This unit details out the basic features of Professionals and distinguishes the professions from other occupations. It also focuses on the minimum requirements in technical teachers for becoming good professionals. Further, it also describes, what teachers need to do to acquire these attributes so that they may excel as professionals and may rejuvenate the 'Guru-Shishya Parampara' in the modern education system. For transforming from teacher to guru, a teacher has to also work as mentor and counsellor. Therefore, the approaches for mentoring and counselling are explained. In last lesson of the unit it is emphasized that professionals are also required to feel responsible for social concerns related to their field and also work for mitigating these concerns.

Key Topics: Professions and professionalism - Technical Teacher as a professional - Guru-Shishya Parampara - Professional excellence - Mentoring and Counseling - Social responsibility

2.4.2. Human Realities and Essentialities of Complementarities of Values and Skills

Everyone wants to be prosperous and happy in life and so is true for professionals including teachers. It is more important for professionals to remain happy since for their effectiveness, peace of mind is utmost necessary. However, it is difficult for most of the people to be in a perpetual state of happiness as nearly all people have spells of unhappiness in their lives due to some problematic circumstances. But with efforts a mind can be trained to remain happy in most of the situations. Developing this state of mind requires, developing harmony within self and with family, society and nature. Moreover, to avoid the negative emotions such as greed, envy, revenge and fear to creep into the mind, professionals are required to imbibe in themselves the concept of co-existence, as it is beneficial for all, **'to live and let live'**. In other words, if everyone tries for happiness not only for self, but also, for others, it will be easier to achieve the state of perpetual happiness for every individual as all are interdependent on each other and that is the philosophy of 'Sarve Bhavantu Sukhina', which is discussed in this unit.

Key Topics: Human Aspirations - Perpetual Happiness and Prosperity - Need for values and skills - Harmony with self, within family, with society and with nature -

Concept of co-existence- Interconnectedness and mutual fulfillment- Developing a holistic perception - ‘Sarve Bhavantu Sukhinah’.

2.4.3. Professional Values. Attitudes and Ethics

This unit explains the meaning of values, attitudes and ethics, and techniques for developing values. Importance of self exploration for developing a good value system is also discussed. Professional values and ethics for technical teachers are emphasized. Most professionals face ethical conflict in their lives, approaches for resolving such conflicts are explained with the help of case studies. Academic ethics and code of conduct for higher education teachers are described in brief. In last lesson of this unit role of professionals societies in ensuring the ethical behaviour by their fellows is explained.

Key Topics: Values, attitudes and ethics – Type of values and attitudes and their development– Self exploration for value education – Professional values and ethics for technical teachers – Resolving the ethical conflict – Case studies -Code of Conduct for Academics - Roles of Professional Societies.

2.4.4. Sustainable Development

Large scale development is essential for poverty alleviation, especially in developing countries such as India. However, development has its impact on all the five elements of nature i.e. Earth, Water, Air, Fire (Energy) and Space. This impact is visible in form of pollution or/and scarcity of all these panch tatavas, depletion of natural resources and climate change. In this scenario, the concept of sustainable development can only fulfill to some extent both of the conflicting aspirations of ‘poverty alleviation’ and ‘environment protection’. This unit discusses all these issues in brief so that the teachers are sensitized towards these issues and they in turn can sensitize UG students who would be the professionals of tomorrow.

Key Topics: Development and poverty alleviation – Human Impact on Ecology: Effect on Panch Tatavas – Sustainable Development: Concept, Basic Parameters and Environmental Ethics

2.4.5. Approaches for Sustainable Development

Scientists and Engineers are developing energy and environment friendly materials and processes for manufacturing different goods and providing variety of services. These methods, machines and materials being developed are discipline specific, which teachers might have learnt in their UG and PG programmes. In addition to these, some special approaches for design, manufacturing and use of goods are required for sustainable development; these approaches are discussed in this unit. Cradle to cradle approach for designing



goods is most pertinent approach in this regard. In addition to this concept of 5Rs i.e. Refuse, Reduce, Repair, Recycle/Recover, Reuse is very effective concept which needs to be implemented in everyone's personal and professional lives and hence it is elaborated in this unit. Last, but not least, last lesson of this unit explains the need of establishing a special kind of institutional culture required for development of professional values and ethics and concern for sustainability in the UG students.

Key Topics: Sustainability: Cradle to Cradle approach - 5Rs: Refuse, Reduce, Repair, Recycle/Recover, Reuse – Institutional culture for values and sustainable development.

2.5. Reference

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2. Govindarajan, M., Natarajan, S. and Senthilkumar, V.S., Engineering Ethics includes Human Values. Delhi: PHI Learning Private Limited, 2016
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MODULE 3

COMMUNICATION SKILLS, MODES AND KNOWLEDGE DISSEMINATION

Course Coordinator	:	Dr. Amandeep Kaur Sandhu
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Other Contributors	:	Ms. Suditi Jindal
Content Duration	:	20 hours

3.1. Rationale

The “Communication Skills, Modes and Knowledge Dissemination” is a Module developed as a part of AICTE-National Level Initiative for Technical Teachers Training. As we all know, the classroom is a complex communication space. It is meant not only for the provision of information on classified subjects but also to develop all sort of communicative abilities. Communication makes student teacher relationship more effective and contribute to student learning. It is also the wellspring for continued academic exchange and mentoring. A teacher who is an effective communicator will be able to express his/her ideas and views more clearly and with confidence.

This module aims to provide interactive MOOC learning experience and enabling the teachers to acquire skills in communication i.e. listening, speaking, reading and writing, select various active learning strategies to enhance student engagement, select and integrate media in classroom and evolve strategies for obtaining and providing feedback for improving effectiveness of teaching learning.

The objectives of this module will be achieved through video based lectures, Handout along with self-practice task embedded in it to provide experiential learning, The additional resources in the form of web links and other references to study for the entire module.

3.2. Units

UNIT NO.	UNIT TITLE
1	Classroom Communication : An Introduction
2	Listening and Speaking
3	Reading and Writing
4	Barriers to Classroom Communication
5	Active Learning



6	Role of Media in Classroom Communication
7	Use of Board (Whiteboard/Blackboard)
8	Feedback

3.3. Module Outcomes

After completing the learning tasks in this module, the learners will be able to:

- Demonstrate effective Communication skills i.e. Listening, Speaking, Reading and Writing.
- Select active learning strategies to enhance students' engagement.
- Select and integrate media to enhance interaction in classroom.
- Evolve strategies for obtaining and provide feedback for improving effectiveness of teaching learning.

3.4. Contents

3.4.1. Classroom Communication: An Introduction

Introduction, Communication: Concept and Process, Stages in Classroom Communication, Skills and Purposes, Principles of Effective Classroom Communication; Principles for Teachers, Principles for message design, Principles for selection of instructional methods and media, Principles for creating conducive learning environment

3.4.2. Listening and Speaking

Listening

Concept, Difference between hearing and Listening, Purpose of Listening, Process of Listening, Types of Listening, Principles of effective Listening, Development of Listening among students

Speaking

Concept, Purpose and Principles of Effective Speaking

3.4.3. Reading and Writing

Reading

Concept, Purposes, Types, Stages, Strategies for effective reading, techniques and practices to promote reading in classrooms, helpful tips for effective reading

Writing

Concept, Purpose, Process of writing in classroom, Principles of Effective writing. Different types of writing in classroom, developing writing in classroom

Non-technical Writing

Memorandum, Noting and Drafting, Meeting Procedure, Executive Summary

3.4 .4. Barriers to Classroom Communication

Introduction, Teacher related barriers, Message related barriers, instructional methods and media related barriers, students/learners related barriers

3.4 .5. Active Learning

Concept of Active Learning, Major Characteristics of Active Learning, Elements of Active Learning, Benefits of active Learning, Requirements to create Active Learning classroom, Active Learning techniques to achieve learning objectives at various levels of Bloom's Taxonomy, Classification of Active Learning Techniques, Barriers to Active Learning, Overcomes Barriers to Active learning

3.4 .6. Role of Media in Classroom Communication Media

Concept, Types and Purposes: Concept, Types, Purpose, Selection of Media and Significance of Media in Classroom, Uses of media

Digital Media in teaching learning

Introduction, Types of digital media tools, advantages of using digital media in classroom, factors to consider while using digital media in classroom

3.4 .7. Use of Board (Whiteboard/Blackboard)

Concept, Significance of Board- Merits and Demerits, Dos' and Don'ts to be followed while using board, Different methods of using board

3.4.8. Feedback

Concept and purpose, Types of Feedback, four 'W's and one 'H' of feedback, Relationship between Assessment and Feedback, Principles for obtaining and providing feedback

3.5. Reference

1. Budhair, S.S. & Skipwith, K. (2017). Best Practices in Engaging Online Learners Through Active and Experiential Learning Strategies. London: Routledge



2. Green, T.D. & Brown, A.H. (2017). *The Educators Guide to Developing New Media and Open Education Resources*. London: Routledge.
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MODULE 4

INSTRUCTIONAL PLANNING AND DELIVERY

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Content Duration	:	40 hours

4.1. Rationale

In the process of effective curriculum implementation through teaching learning strategies, one of the most essential competencies required by the teacher is to plan and effectively deliver the instructions for achieving the expected learning outcomes. Instructional planning emphasizes on the whole range of planned activities used by the teacher for active engagement of students. It is one of the core abilities for effective delivery in the classroom, laboratory, workshop and other learning environments. For this, the teacher ought to know the subject matter to be taught, the learner characteristics as well as the strategies to develop the skills and abilities in the learner. This requires the teacher to understand the process of human learning and curriculum analysis in order to interpret correctly the expected learning outcomes for their accomplishment. In this module teachers have also been provided opportunities to integrate the principles of media design with principles of learning for designing instructional material and planning the total instructional process. This module has six units: Curriculum analysis for session planning, Instructional methods and strategies Part 1 and Part 2, Instructional media, Instructional plan preparation, and Instructional delivery. The module has been designed to provide hands-on experience to trainee teacher in preparing instructional plan and instructional material leading to delivery through practicum in the classroom.



4.2. Units

UNIT NO.	UNIT TITLE
1	Curriculum Analysis for Session Planning
2	Instructional Methods and Strategies- Part 1
3	Instructional Methods and Strategies- Part 2
4	Instructional Media
5	Instructional Plan Preparation
6	Instructional Delivery

4.3. Module Outcomes

After completing the learning tasks in this module, the teacher trainee will be able to:

- Interpret the learning outcomes after curriculum analysis of a given course.
- Select appropriate instructional methods and strategies in view of the learning outcomes.
- Prepare session plan for classroom, laboratory, workshop and industry-based instruction.
- Relate the classroom delivery with relevant assignments, tests and other activities for reinforcement of learning.
- Supplement the classroom presentations with appropriate media and materials for effective teaching learning process.
- Deliver a session in a classroom and obtain feedback for improvement.

4.4. Contents

4.4.1. Curriculum Analysis for Session Planning

This unit focuses on curriculum analysis of a specific course, so as to understand the relationship between programme outcomes, course competency, course outcomes, unit outcomes, practical outcomes and affective domain outcomes and how to arrive at subject matter comprising of topics, subtopics, practical activity, project work, etc. The teacher trainee will use taxonomy table, create spray diagram and concept maps to analyse the curriculum. The teacher trainee will be equipped to use relevant strategies for teaching elements of content analysis such as facts, concepts, principles, and so on. Principles of learning and

events of instruction will be dealt with from instructional planning point of view. The contents of this unit include: 4 lessons, 8 videos, 4 activities, 4 assignments, 1 discussion forum, and Multiple-choice Questions.

4.4.2. Instructional Methods and Strategies- Part 1

Planning a teaching learning session involves a number of instructional decisions, of which one of the vital decisions is regarding the instructional methods to be employed. For any given learning outcome, teachers may choose among a wide range of teacher-centred and student-centred instructional methods. Effective teachers look for an appropriate match between the content to be taught and strategies for teaching that content. This unit is intended to provide an exposure to various basic instructional methods through 4 lessons in the form of e-content, 11 video lectures, 2 activities, 2 assignments, 2 discussion forums, and Multiple-Choice Questions.

4.4.3. Instructional Methods and Strategies- Part 2

This unit, which is in continuation of 'Instructional Methods and Strategies- Part 1' focuses on some advanced instructional methods and strategies, along with blended and flipped learning approaches. These require action, interaction and reflection by students individually or in groups to develop the higher taxonomy level skills in all the domains of learning matching with the programme outcomes, course outcomes and learning outcomes. This unit provides an exposure to various advanced instructional methods, strategies and approaches through 2 lessons in the form of e-content, 14 video lectures, 7 activities, 8 assignments, 4 discussion forums, and Multiple-Choice Questions.

4.4.4. Instructional Media

Instructional media plays an important role in improving the effectiveness of instruction and in enhancing the process of learning. This unit focuses on the importance of instructional media, identification of relevant media for the given teaching learning environment from traditional to emerging media. Further, the importance of various media elements, media design principles and guidelines, designing of print and non-print media, effective use of chalkboard and interactive board are elaborated with examples in video as well as in e-content. This will guide the teacher trainee in designing, developing and using different types of instructional media in classroom, laboratory, workshop, etc. The contents of this unit include: 4 lessons, 11 videos, 7 activities, 2 assignments, 2 discussion forums, and Multiple-Choice Questions.



4.4.5. Instructional Plan Preparation

Every teacher, whether newly recruited or experienced, has to plan for the sessions to be implemented. This ensures effective use of resources and organization of teaching learning activities, to attain intended learning outcomes. A teacher is expected to plan for classroom, laboratory, workshop and industry-based instructions. The session plan should be discussed with peers and mentors to obtain feedback on various aspects of planning. The developed plan needs to be modified in view of the feedback provided. This unit will equip a trainee teacher to prepare a session plan systematically and get it validated. The contents of this unit include: 3 lessons, 3 activities, 1 assignment, and Multiple-Choice Questions.

4.4.6. Instructional Delivery

The final outcome of this module is to improve the teachers' performance through 'Practicum in classroom'. Apart from planning for practicum, organisation and effective management of resources for delivery are also important. The teacher also has to make provision for assessment of student's learning during planning and delivery of the session, which is an integral part of teaching learning process. Assignment, quiz, classroom tests, are some of the important tools to assess the learning of students in formative stage in classroom situation while checklists, rating scales, and rubrics are used for practical performance assessment during workshop and lab sessions. Guidelines for using these tools in brief are included in this unit, and will be dealt in detail in Module 6 on 'Students' Assessment and Evaluation'. Further in this unit, the teacher will deliver a session of stipulated duration in a classroom situation. The presentation will be followed by feedback, which may be provided using the suggested format by the peers and mentor. In addition, the teacher trainee ought to introspect, as self-feedback is significant activity for self-improvement. This feedback process will result in identification of areas for improvement in order to enhance the effectiveness of teaching - learning process. As we know any skill cannot be developed in one attempt, so the cycle of practicing, getting feedback, improving the performance based on the feedback and re-practice should continue, till the teacher achieve confidence level and develop effective presentation skills. The contents of this unit include: 4 lessons, 6 videos, 4 activities, 6 assignments, 1 discussion forum, and Multiple-Choice Questions.

4.5. Reference

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MODULE 5

TECHNOLOGY ENABLED LEARNING AND LIFE-LONG SELF-LEARNING

Course Coordinator	: Dr. G. Janardhanan
Course Co-Coordinators	: Dr. K. S. A. Dineshkumar and Dr. V. Shanmuganeethi
Other Contributors	: Dr. P. Malliga and Dr. R. Ravichandran
Content Duration	: 40 hours

5.1. Rationale

The “Technology Enabled Learning and Lifelong learning self-learning” is an online SWAYAM course as a part of AICTE-National Initiative for Technical Teachers Training. It is designed to provide interactive MOOC learning experience to the faculty members and also to develop an understanding of infusing technology into the classroom instruction. How technology facilitates in connecting the CONTENT to CONTEXT during the teaching-learning process is explained through this course. Through many examples and case studies, the participants will be exposed to effectively use technology for their instruction and what aspect to be taken into consideration while designing courses with technology. In addition to this, participants will understand how technology tools can foster collaboration while delivering instructional content. They will also learn strategies for assessing students and managing classroom instruction. The course consists of lectures, experiential sharing, activities, and interviewees from the stakeholders.

5.2. Units

UNIT NO.	UNIT TITLE
1	Introduction to Technology Enabled Learning
2	Tools & Resources for creating Learning Environment
3	Tools & Resources for creating Learning Resources
4	Tools & Resources for creating Learning Assessment
5	Blended / Flipped Classroom & Artificial Intelligence In classroom teaching

6	Digital Literacy, Copyrights & Lifelong learning
7	Social Media in Education, Webinars & MOOCS
8	Integration and Implementation

5.3. Module Outcomes

After completing the learning tasks in this course, the participants will be able to:

1. Design effective lessons using various instructional technologies.
2. Identify online Free and Open Source Software [FOSS], Open Educational Resource (OER) and other digital tools for the creating active learning environment.
3. Select relevant online platforms and social media to promote student communication and peer discussion.
4. Design different types of formative and summative assessment strategies and tools for a technology-enabled learning.
5. Participate effectively in MOOC courses/webinars for knowledge enhancement.
6. Use different types of online journals and other learning resources for professional growth avoiding plagiarism.
7. Use the Artificial Intelligence appropriately in classroom teaching learning situations.

5.4. Contents

5.4.1. Introduction to Technology Enabled Learning

This unit focuses on a broader scope of what it is like teaching with technology, such as, how the faculty responsibilities are redefined in engaging the millennials, where lies the challenges and opportunities in designing effective classroom engagement. We also provide quick overview on the learning theories and it is tuned towards technology enabled teaching. The participants also explore classroom management strategies that support active learning in ICT enabled instruction.

Introduction to Teaching into Technology – Technology in Education: National Educational Policy (Draft) Overview - The Crucial role of the teacher in TEL - Learning Space: Teaching Environment - Teaching Learning Principles: ICT Perspective Learning Theories - The potential benefits of adopting TEL .



5.4.2. Tools and Resources for creating Learning Environment

This unit will provide you with hands on practice about the different tools to be deployed for creating learning environment. The focus will be in utilizing Open and Institutionally Supported Technologies' and assisting in understanding the benefits and restrictions of both broad categories of technologies. In this module we will ask you to think about the reasons why you might want to use freely available online tools for your teaching - or your institution's learning management system.

Using Online Environments for Teaching - Planning Online Class - Considerations for Choosing Technology Tools - Demonstration: Google Classroom; Edpuzzle; LMS (Lite Version) - Virtual Laboratories - Online Access to Remote Laboratories -- Case Study: Experiential Sharing - Virtual Laboratories - Teaching Using Scenario Based Simulations.

5.4.3. Tools and Resources for creating Learning Resources

This unit will provide you with hands on practice about the different tools to be deployed for creating learning resources esp., student support instructional materials. Usage of Open Educational Resources (OER) and other online resources in the instructional materials will be discussed. How to evaluate the effectiveness and appropriateness of resources you find online is also explored.

Online tools for content creation - Promoting active learning strategy - Considerations for Choosing Technology - Screen Casting Technique - Ed TED - Creation of Mind map – Introduction to Gamification – Use of Documentaries in TEL.

5.4.4. Tools and Resources for creating Learning Assessment

This unit will provide you with some fundamental principles and practical examples for designing formative and summative assessment. We will also explore benefits and considerations that need to be considered when we adopt an online assessment strategy in teaching, and how using technology can improve the efficiency and effectiveness of the assessment process.

Fundamentals of Assessment - Online tools for assessment - Considerations for Choosing Technology- Tool Demonstration: Google Forms, Hot Potatoes, Plickers, Assessment in LMS, Inline Video Quiz, Framing of Rubrics, Audio Feedback, portfolios – Reflective Teaching Tool - Learning Analytics to inform learning.

5.4.5. Blended / Flipped Classroom and AI In classroom teaching

This unit will provide you with the insight about integration of tools in the classroom. The different types of blended classroom and Flipped approach to be adopted. The golden rules to be used for flipping is discussed in detail. The concept of Artificial Intelligence Used in Education – Real World Examples of Today and a Peek into The Future.

Concepts of Blended Instruction - Blending Models - Implementation strategies of Flipped Classroom– Role of Artificial Intelligence in Education –Personalised learning – Role of Educators - Tutoring

5.4.6. Digital Literacy, Copyrights and Lifelong learning

This unit will provide you with the insight about how to discover the role of the faculty member in digital teaching learning process and provide insight about how to explore the library facilities, discover the role of the faculty member in digital journals. The different publication identification system and its insight about Research ID, ORCID, Scopus Author ID. Plagiarism tools and its implementation.

Understanding Creative Commons - Handling copyright for online resources / courses - Looking into Insight about OER - Insight about Research ID, ORCID, Scopus Author ID - Plagiarism tools and its implementation.

5.4.7. Social Media in Education, Webinars & MOOCS

This unit will provide you with the insight about how to infuse social media in teaching and learning process. How to infuse Blog, Twitter, Google hangouts into discussion and collaborative learning. How to participate in webinar and select best courses for online learning.

Web 2.0 Technologies: Twitter, Wikis and Blogs - Using Blogs for Peer Feedback and Discussion Using Online communities– Nurturing Collaboration – Webinar – MOOCS – Strategies to select MOOC – Steps to complete MOOCs.

5.4.8. Integration and Implementation

This unit will provide you with the insight about integration of tools in the classroom. We also discuss the important roles that curriculum design, activity structure, the relevance of chosen technology and effective classroom management. The module also introduces the concept of learning analytics as an informative tool to enable up to the minute evaluation of your online class.



Insight about integration of tools in the classroom - Developing and Drafting Institutional Policies - Reviewing about Institutional Capacity with respect to ICT - Institution preparedness for TEL - Learning analytics.

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MODULE 6

STUDENT ASSESSMENT AND EVALUATION

Course Coordinator	: Dr. V.Shanmuganeethi
Co-Coordinator	: Dr. G.Janardhanan and Dr. KSA Dinesh Kumar
Content Duration	: 40 hours

6.1. Rationale

Student Assessment and Evaluation is an online SWAYAM course specially designed and developed for the AICTE Technical Teacher Training Module. The main theme this MOOC is that the assessment of learning plays an important role in the instructional process and that its effectiveness depends heavily on the ability of teachers to construct and select tests and assessments procedures that provide valid measures of learning outcomes. This MOOC is structured to provide interactive learning experience to the faculty members and also to develop an understanding of how to assess the students in-terms diagnostic, formative, and summative assessment. The assessment would provide 360-degree feedback of the student in connection to quantitative as well as qualitative performance. The assessment practices must give the clarity between learning versus scoring. Since, assessment gives the feedback to the faculty members about their instructional strategies, it helps to plan and improve the Instructional strategies scientifically. So, this MOOC helps to the faculty member to gather information about the impact of instructional strategies and how well the student learned subject. Further, assessment and evaluation provide pathway to improve the institution as whole.

6.2. Units

UNIT NO.	UNIT TITLE
1	Introduction to Assessment and Evaluation
2	Two-Dimensional Approach
3	Assessment procedures
4	Design of Question Paper
5	Performance Assessment
6	Establish Characteristics of Assessment
7	Item Analysis
8	Software tools for Assessment



6.3. Module Outcomes

1. Use relevant characteristics of assessment practices in assessing various engineering courses.
2. Prepare convergent and divergent questions with assessment schemes
3. Plan direct and indirect assessment strategies for engineering courses
4. Design specification tables to address the Revised Bloom's Taxonomy
5. Design relevant rubrics to assess the student performances in all the three domain of learning
6. Check the content and construct validity
7. Estimate the reliability of your question set.
8. Interpret the assessment score with respect to difficulty index and discrimination index
9. Integrate different assessment software tools for relevant classroom teaching-learning

6.4. Contents

6.4.1. Introduction to Assessment and Evaluation

This unit details the basic concepts of student assessment and evaluation. In assessment practice, there are different forms of assessment such as assessment of learning, assessment for learning and assessment as learning. Further, this unit focus on the questioning skill of the teacher in the classroom assessment.

Introduction to Assessment – Languages of Assessment – Different forms of Assessment – Preparative Assessment – Formative Assessment – Diagnostic Assessment - Summative Evaluation – Questioning in formative assessment.

6.4.2. Two-Dimensional Approach

The two-dimensional approach gives the clarity on the four questions such as What is important for students to learn in the limited classroom time available? (the learning question). The second question is How does one plan and deliver instruction that will result in high levels of learning for large numbers of students? (the instruction question). The third question is How does one select or design assessment instruments and procedures that provide accurate information about how well students are learning? (the assessment question) and the last question is How does one ensure that objectives, instruction, and assessment are consistent with one another? (the alignment question)

Determine the objectives of the assessment - Mapping Two-dimensional approach of preparing the Instructional objectives with complexity of questions
 – Factual Questions – Conceptual Questions – Procedural knowledge Questions
 – Meta- Cognitive Questions

6.4.3. Assessment procedures

This unit explain the major classification of assessment procedures such as maximum performance test and typical performance test. In the formative and summative assessments, the key component of assessment procedure is tools which is called question items. How to prepare the question item is a challenging task for the faculty member. A valid question item will bring the right answer. So, this unit explain the construction of achievement test.

Types of Assessment – Direct Assessment strategies – Indirect Assessment strategies – Maximum performance – Typical performance – Construction of Achievement Test - Types of questions – Supply type – Selection type – Numerical problem-solving methods – Connect the item type with context.

6.4.4. Design of Question Paper

The method of ensuring congruence between classroom instruction and test content is the development and application of a table of specification (ToS), also referred as a test blue print. The table of specification helps the teachers review the curriculum content and minimize the chance of overlooking important concepts or including relevant concepts. It also encourages the teacher to use items of varying complexity.

Introduction to Table of Specifications (TOS) – Modules vs Levels in the TOS – Scheme of Evaluation in TOS – Factors to be considered for preparing TOS.

6.4.5. Performance Assessment

Student performance in the laboratory, classrooms, industrial training, Assignment work workshop and etc., are very much important to learn their subject actively. To measure their learning in terms of performance is equally important as regular exams what we are conducting in terms of assessment or examination. Checklists, rating scales and rubrics are tools that state specific criteria and allow teachers and students to gather information and to make judgements about what students know and can do in relation to the outcomes. So, this unit provides the steps to assess the student performance as what they can do with what they learn.

Overview of Performance Assessment- Introduction to Rubrics – Need for the rubrics – Holistic rubric – Analytic rubric – preparation of Criteria and descriptors



for Rubrics – Consolidation of rubric values – B.Tech / M.Tech / PhD thesis Evaluation – Portfolios.

6.4.6. Establish Characteristics of Assessment

Teachers often use a variety of evaluation instruments to assess the scholastic achievement of students. Test instruments are widely used to measure the student achievement at different stages of the teaching and learning process. The effectiveness or the quality judgement depend upon the equality of the test instruments. The most essential characteristics of a good test are validity, reliability, and usability. This unit explain the characteristics of assessment tool or assessment results.

Characteristics of evaluation tool – Validation of the tool - Reliability – Validity vs Reliability – Logical and statistical validity – Usability – Discrimination factors in the Evaluation tool – Interpretation of Test score – Estimate Reliability.

6.4.7. Item Analysis

A number of quantitative procedures are useful in assessing the quality and measurement characteristics of the individual items that make the test. Collectively the procedures are referred to as item analysis statistics or procedures. Item analysis procedures examine the individual items separately. This unit explain the procedures to be followed to do the item analysis procedure with respect to item difficulty, item discrimination and distracter analysis. It also gives the details of qualitative item analysis procedures.

Introduction to item Analysis – Difficulty index – Discrimination Index – Distractor analysis - Norm referenced interpretation – Criterion Referenced Interpretation.

6.4.8. Software tools for Assessment

Modern technology offers educators through a variety of software tools that can be used in the classroom. Technology can help teachers track and assess their students' as well as their own performance in the classroom. It can also be used to facilitate communication between students and teachers and to create digital records of student growth and development that can easily be passed. Hence, this unit explain the procedures to be followed for the top rated open source tools which can be suit to classroom assessment and performance assessment.

Free and FOSS tools for preparative assessment, formative assessment and Evaluation – Performance assessment tool

6.5. Reference

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MODULE 7

CREATIVE PROBLEM SOLVING, INNOVATION AND MEANINGFUL R&D

Course Coordinator : Prof. Dr. PK Tulsi

Content Duration : 40 hours

7.1. Rationale

There has been increasing emphasis on research and development, creativity and innovation due to globalization, intense competition and rapid technological developments. Society is facing a number of challenges that require novel responses. Products have shorter life cycles and there is a need to develop new products that meet the needs and expectations of customers. Creativity and innovation have become essential for survival of any organization or industry. Creativity may not lead to innovation but for any innovation to happen, creativity is essential. Thus, it is essential to develop capabilities to solve problems creatively, innovate and undertake R & D among learners of 21st century. The module aims at enabling the teachers working in technical institutions to understand the concept and process of creative problem solving, innovation and R & D so as to enable them solve problems faced creatively and innovate the processes, products, and services in institutions or in their own areas of specializations; and to ensure development of these capabilities among the learners. In addition, the module aims at enabling the teachers to undertake research to improve the relevance, efficiency and effectiveness of various sub-components of technical education system. The objectives of the module will be achieved through e-content, e-tutorials, discussion forum assignments, and project work.

7.2. Units

UNIT NO.	UNIT TITLE
I	
1	Creative Problem Solving
2	Innovation: Concept, Types and Process
3	R&D Through Team Work
II	
1	Research in Technical Education: An Introduction

2	Review of Related Literature
3	Selecting & Defining Research Problem
4	Selecting Research Design & Describing Procedure:
	• Descriptive Research
	• Correlation Research
	• Ex-Post Facto Research
	• Experimental Research
5	Undertaking Action Research
6	Sampling Techniques
7	Measuring Instruments
8	Collection of data
9	Analysis of Data
10	Writing a Research Proposal
11	Writing a Research Report Evaluating Research Report

7.3. Module Outcomes

After completing the module, the participants will be able to:

- Solve problem creatively
- Innovate the process, services and products etc. in work life
- Build effective teams for R&D
- Undertake research to improve the various sub-components of technical education system

7.4. Contents

7.4.1.

1. **Creative Problem Solving:** Concept, Process of Creative Problem Solving, Techniques of generating & focusing ideas/Options
2. **Innovation:** Concept, Types and Process-Creativity, Invention & Innovation, Concept of Innovation, Types of innovations- Incremental and radical Innovations; process innovation, product innovation, service innovation, technological innovation; Models of Innovation used in various generations of innovation, Process of Innovation- Idea generation and mobilization, Advocacy and Screening, Experimentation,



Commercialization and Diffusion and implementation; Creating Conducive Environment for Innovations; Benefits of Innovations.

3. **R&D Through Team Work:** Concept, Characteristics of effective teams, Principles for Building Effective Teams

7.4.2.

1. **Research in Technical Education: An Introduction:** Need for Educational Research; Source of Knowledge – Experience, Expert Opinion and Reasoning - Deductive reasoning and Inductive reasoning, The Scientific Approach to Knowledge Generation; Education Research - Research: Concept, Educational Research: Concept and Types of Research- Classification of Research on the basis of Purpose and Classification of Research on the Basis of Method; Steps in Conducting Research
2. **Review of Related Literature:** Concept; Purposes of Review of Related Literature; Sources of Information – Primary sources, Secondary Sources, Preliminary Sources; Steps in conducting review of related literature
3. **Selecting and Defining a Research Problem:** Sources of Problems, Criteria for selecting a Research Problem, Evaluating the Problem, Steps in Defining Research Problem and writing Research Question, Do's & Don'ts of Writing/ Defining a Research Problem and Stating Null and Research Hypotheses
4. **Selecting Research Design and Describing Procedure:** Descriptive Research: Survey Research - Types of Descriptive Research – Survey Research – Types of Survey Research and Steps in the Process of Planning and Conducting Survey; Case Study Research - Case Study Research – Concept, Designing Case Studies – State Research Questions or Objectives of a Case Study, State the Propositions and Describe case study approach – Select Unit of Analysis, Select Sources of Evidence, Select/develop tools for data collection, Describe data collection procedure and Preparing for Data Collection – Collect data and Analyze Data and Interpret Results ; Content Analysis Research - Content Analysis: Concept; Steps in conducting Content Analysis – State the Purpose of Content Analysis, Write Research Questions, Sample the Content, Develop Classification System for Analysis, Ensure High Degree of Inter-rater Reliability and Analyze Data and Interpret the Findings
Correlational Research: Introduction an concept, Purpose, Advantages, Correlation and its types, correlation coefficient, Different types of

correlation studies Ex-Post Facto Research: Concept, Characteristics, Advantages & Limitations and Process of Conduct of Ex-Post-Facto Research

Experimental Research: Concept, Purposes and Characteristics, Experimental Research Designs (True, Quasi & Pseudo) and Factorial Designs, Step-by-step Procedure, Experimental Control, Internal & External Validity (Threats).

5. **Action Research:** Need and Concept, Process of Conduct of Action Research
6. **Sampling:** Introduction to sampling, various terms used, Advantages and disadvantages of sampling, Characteristics of a good sample, Determination of sample size, Different sampling designs, Advantages and disadvantages of different sampling designs, selections of different sampling design.
7. **Measuring Instruments:** Introduction, Characteristics of a good Measuring Instruments, Designing a Questionnaire, Interview schedule-Concept types and designing interviewer schedule: Observation Schedule- Concept types and Designing Observation Schedule: Standardized test – concept and characteristics
8. **Collection of Data:** Introduction, Guidelines for Collection of Data
9. **Analysis of Data:** Introduction, Scales of Measurement – Nominal scale, Ordinal scale, Interval scale, Ratio scale: Methods of data tabulation and Analysis – Ranking, Grouping/Frequency distribution, graphic representation, and descriptive statistics- Measures of central tendency, Measures of Variability, Normal Probability curve, skewness and Kurtosis: Measures of Relationships, Inferential statistics- basic terminology, inferential statistical techniques and Selection of statistical techniques
10. **Formulating a Research Proposal:** Formulating a Research Proposal - Concept, Significance and Types, Common mistakes and Format.
11. **Writing a Research Report and Evaluating Research Report:** Writing a Research Report: Concept, Types and Format and Guidelines; Evaluating Research Report – Introduction, Purposes, Parts of Research Report, Parameter for evaluating research report and Rubric for Evaluating Research Report



7.5. References

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MODULE 8

INSTITUTIONAL MANAGEMENT AND ADMINISTRATIVE PROCEDURES

Course Coordinator	: Dr. Rakesh K Wats
Course Team	: Dr. S S Pattnaik & Dr. Sunil Dutt
Content Duration	: 40 hours

8.1. Rationale

The “Institutional Management and Administrative Procedures” is an online SWAYAM course as a part of AICTE- National Initiative for Technical Teachers Training. It is designed to provide an interactive learning experience to the faculty so as to develop their basic skills to effectively and efficiently manage their departments/institution, there-by contribute in the holistic development of the institution. When the quality of education in the Indian institutions is a big question mark, the role of a teacher as a leader of teaching learning process and as a manager in executing varied needed tasks of the teaching system becomes very important. To perform managerial roles, a teacher should also be well acquainted with the administrative procedures. As the public perception of the engineering professionals coming out the technical institutions is also on a downward spiral, it is important that the students coming out of the institutions are churned with needed hard and soft skills, making them relevant to the highly competitive world of work. Here also, the role of a teacher becomes extremely important. This module has been aimed to develop professional teachers for effectively performing the above roles.

8.2. Units

UNIT NO.	UNIT TITLE
1.	Introduction to Institutional Management
2.	Institutional Management Process : Institutional Planning
3.	Planning: Strategic Planning for Future Growth and Development
4.	Institutional Management Process : Organising for Optimisation
5.	Organising : Partnering for Success
6.	Institutional Management Process :Staffing with Relevant Human Resources



7.	Staffing: Promotion and Compensation for Job Satisfaction
8.	Staffing: Financial and Purchase Procedures for Institutional Management
9.	Institutional Management Process: Directing through Academic Leadership
10.	Directing through Institutional Communication
11.	Directing through Motivation for Higher Performance
12.	Directing through Planned Change & Innovation for Institutional Growth and Development
13.	Directing: Managing Goals, Time and Attitude
14.	Institutional Management Process: Monitoring & Controlling for Higher Performance
15.	Controlling: Performance Appraisal and Management
16.	Controlling: Institutional Evaluation for Continuous Improvement

8.3. Module Outcomes

After successfully completing this module, the learners will be able to:

- Explain the concept, importance and process of Institutional Management in today's scenario
- Prepare a strategic plan, institutional design/ chart an teams to enhance institutional efficiency
- Determine manpower requirements and recruit, select and place relevant individuals applying appropriate rules and regulations
- Direct the activities of individuals through effective communication, motivation and leadership
- Manage planned change by setting SMART goals and innovative approaches
- Develop students with managerial skills to emerge as leaders in their own sphere of work

8.4. Contents

8.4.1. Introduction to Institutional Management

This unit shall make the learners understand the basics of institutional management and its importance especially in the changing higher education ecosystem in the country. Its role in making higher education system in India

effective, efficient and responsive to the needs of different stakeholders has been dealt up. The learners shall understand the basics of management of curriculum, institutional human resources, financial management and management of infrastructure for the success of an institution.

8.4.2. Institutional Management Process: Institutional Planning

This unit lays the importance of planning in the life of any educational institution. After the basic concept of planning, its need and scope in an educational institute, the participants shall be exposed to the steps involved in any planning process. This unit shall also dwell upon the prerequisites of any institutional plan, type of plans and their application in the smooth running of any institution.

8.4.3. Strategic Planning for future Growth and Development

This part of the module shall expose the learners to importance of strategic planning in today's scenario. After understanding the basics of strategic planning, the participants shall learn process of strategic planning, and SWOT analysis and its implementation in an institution. How to formulate vision and mission of any institution has also been dealt in this section.

8.4.4. Institution Management Process: Organising for Optimization

In this part, the participants shall be oriented towards the concept and importance of organising in optimizing resources of an institution. How important is an organisational structure in delegating authority, types of organisational structures and how to design an effective organisational structure shall also be made aware to the participants. Participants shall also be made to understand the authority-responsibility-accountability triad and the role they have in enhancing the efficiency and effectiveness.

8.4.5. Organising : Partnering for Success

This section deals with importance of team work for the growth of an institution. After going through the contents the participants will be well versed with many important aspects of "team". Participants shall also understand how networking and partnering with the stakeholders of the system important for any successful institution in being responsive and up-to date in today's changing and competitive world.



8.4.6. Institutional Management Process: Staffing with relevant Human Resources

This capsule highlights the importance of recruiting right man for the right job in any educational institution. The concept of recruitment, its parameters, process, rules and regulations to be followed have been underlined in this unit. Importance of training, its types for the faculty and staff and norms, as recommended by the statutory authority, has also been made an integral part of this unit.

8.4.7. Staffing: Promotion and Compensation for Job Satisfaction

This section provides insight to the role of promotion and compensation in motivating faculty and staff to give their best to the institution. Different types of promotion and their features have also been explained in this segment. Methods of compensation, how to fix these, do's and don'ts of conduct of employees and rules and regulations of Government & statutory authorities regarding these have also been incorporated.

8.4.8. Staffing: Financial and Purchase Procedures for Institutional Management

This unit provides understanding to the salient features of financial planning in an institution. Financial needs, sources of funds, financial analysis, assets management and capital budgeting has been dealt in this part. General purchase procedures based on GFR 2017 are the major input areas in this entirety.

8.4.9. Institutional Management Process: Directing through Academic Leadership

This unit deals with the importance of leadership for any successful academic institution. Participants shall be exposed to various theories of leadership with pros and cons of each. How different leadership styles should be used in handling different types of subordinates form the major part of this important segment.

8.4.10. Directing Through Institutional Communication

Communication which is the lifeline of any institution has been elaborately explained in this unit. Different types of communication, Models and process of communication form the important input in this unit. Participants shall also be exposed to the barriers in communication and how communication skills, can make an important contribution in enhancing the quality, efficiency and effectiveness.

8.4.11. Directing through Motivation for Higher Performance

The aim of this unit is to make the participants understand the concept of motivation, process, theories of motivation and its role in higher performance of the employees. Techniques of motivating self and others form the highlights of this unit. Another subsection of this unit deals with the concept and significance of mentoring, coaching & counselling in an academic institution.

8.4.12. Directing through Planned Change & Innovation for Institutional Growth and Development

In today's changing ecosystem, in-order to embrace the persistence and growth, management of change for any educational institution is very vital. For doing this application of creative mind and innovative approaches have to be followed. This unit deals with these two important aspects.

8.4.13. Management of Goals, Time and Attitudes

The main emphasis of this unit is on three important aspects i.e. management of goals, Time and Attitude. Participants shall be exposed to the characteristics and tips of managing SMART goals; concept of time, causes of time wastage and tips of managing time in this important unit. How to manage attitude and making it positive towards the goals of the institute forms the important point of emphasis in this unit.

8.4.14. Institutional Management Process: Monitoring and Controlling for Higher Performance

The principle of monitoring and control is the basic point of emphasis of this unit. It is important that the managers know how they are performing on different institutional parameters. This section highlights the means of monitoring the performance in different processes, finding gaps and taking corrective actions for continues improvement. Designing effective control systems for above purposes is an area of discussion.

8.4.15. Controlling: Performance Appraisal and Management

This section highlights the importance of Performance appraisal and management for continuous improvement. What and how of performance appraisal, appraisal methods are the fundamentals issues of this section. This unit also presents the role of feedback in enhancing the performance. Legal and



disciplinary procedures in case of inappropriate performance also form a major constituent of this unit.

8.4.16. Controlling: Institutional Evaluation for Continuous Improvement

The emphasis of this unit is on the evaluation of institutional performance in terms of its projects, programmes and services. Why institutional evaluation is needed is the main feature. The concept of academic audit as a tool for institutional evaluation, its focal areas, and process of academic auditing are the main features on which the participants shall be oriented through this unit.

8.5. Reference

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