



**University of
Technology**

Serving Education Since 1976



Value Added Course

Analytical method development

(UOTVC043)

Session 2022-23

School of Pharmecy

About University

The University of Technology was established in 2017 by the Government of Rajasthan through the State Legislature under Act No. 28. It is located in Jaipur and is recognized by the University Grants Commission under Section 2(f) of the UGC Act 1956. The University of Technology is known for providing quality education in various teaching segments and knowledge subjects to students coming from different backgrounds.

Analytical method development

Course Description

The Analytical Method Development course is designed to provide participants with in-depth knowledge and practical skills in developing and validating analytical methods for various applications. This value-added course covers the principles of method development, including the design, optimization, and validation processes essential for ensuring the accuracy, reliability, and robustness of analytical methods in pharmaceutical, chemical, and other industries.

Course Highlights

- **Industry Expertise:** Learn from seasoned professionals with extensive experience in analytical method development.
- **Hands-On Experience:** Engage in practical exercises, workshops, and case studies.
- **Latest Techniques:** Explore advanced technologies and methodologies in analytical testing.
- **Comprehensive Learning:** Covers a wide range of analytical techniques and their applications.
- **Certification:** Receive a certificate of completion to validate your expertise and advance your career.

Course Objectives:

1. Understand the fundamental principles of analytical method development.
2. Design and optimize analytical methods tailored to specific applications.
3. Validate methods to ensure accuracy, precision, and reliability.
4. Apply advanced techniques and technologies in analytical testing.
5. Interpret and analyze analytical data effectively to support decision-making.

Course Structure

Module 1: Introduction to Analytical Method Development

- Overview of Analytical Method Development
- Key Principles and Concepts
- Regulatory Guidelines and Standards

Module 2: Method Design and Optimization

- Selecting Analytical Techniques
- Method Development Strategies
- Optimization of Method Parameters

Module 3: Method Validation and Verification

- Validation Protocols and Procedures
- Accuracy, Precision, and Sensitivity
- Stability and Robustness Testing

Module 4: Advanced Analytical Techniques

- Chromatography (HPLC, GC)
- Spectroscopy (UV-Vis, FTIR)
- Mass Spectrometry and Other Techniques

Module 5: Data Analysis and Interpretation

- Statistical Methods for Data Analysis
- Interpretation of Analytical Results
- Troubleshooting and Problem Solving



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Value Added Course

Health care management

(UOTVC042)

Session 2022-23

School of Pharmecy

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Health care management

Course Description:

The Healthcare Management course is designed to equip professionals with the essential skills and knowledge needed to excel in the rapidly evolving healthcare sector. This value-added course provides a comprehensive understanding of the principles of healthcare management, including strategic planning, operational efficiency, financial management, and quality improvement. Participants will learn to navigate the complexities of healthcare systems and drive organizational success through effective management practices.

Course Highlights

- **Expert Faculty:** Learn from seasoned professionals and industry leaders with extensive experience in healthcare management.
- **Interactive Learning:** Engage in real-world case studies, simulations, and group projects.
- **Current Trends:** Explore the latest trends and innovations in healthcare management.
- **Networking Opportunities:** Connect with peers and industry experts through workshops and networking sessions.
- **Certification:** Earn a certificate upon successful completion to enhance your career prospects.

Course Objectives:

1. Understand the foundational concepts and practices of healthcare management.
2. Analyze healthcare systems and their impact on organizational performance.
3. Implement strategic planning and operational management techniques.
4. Manage healthcare finances effectively, including budgeting and financial analysis.
5. Improve quality and patient care through process optimization and quality improvement strategies.

Course Structure

Module 1: Introduction to Healthcare Management

- Overview of Healthcare Systems
- Key Challenges and Opportunities
- The Role of Healthcare Managers

Module 2: Strategic Planning in Healthcare

- Strategic Analysis and Planning
- Organizational Vision and Mission
- Strategic Decision Making

Module 3: Operational Management

- Workflow Optimization and Efficiency
- Resource Management and Allocation
- Patient Flow and Service Delivery

Module 4: Financial Management

- Budgeting and Financial Planning
- Cost Control and Financial Analysis
- Revenue Cycle Management

Module 5: Quality Improvement and Patient Care

- Quality Assurance and Performance Improvement
- Patient Safety and Risk Management
- Implementing Best Practices in Patient Care



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Value Added Course

Herbarium techniques

(UOTVC082)

Session 2022-23

School of Pharmecy

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Herbarium techniques

Course Description

The Herbarium Techniques course is designed for individuals interested in mastering the art and science of plant specimen preservation and documentation. This value-added course offers comprehensive training in the techniques used to create, maintain, and utilize herbarium collections. Participants will learn about specimen collection, preparation, and preservation, as well as the management and use of herbarium data for research, education, and conservation purposes.

Course Highlights

- **Expert Instruction:** Learn from experienced botanists and herbarium curators.
- **Practical Experience:** Gain hands-on experience in specimen collection and preparation.
- **Comprehensive Coverage:** Covers all aspects of herbarium techniques from collection to data management.
- **Advanced Techniques:** Explore modern methods and technologies in herbarium maintenance.
- **Certification:** Receive a certificate of completion to enhance your professional qualifications.

Course Objectives:

1. Understand the importance and role of herbarium collections in botanical research.
2. Master techniques for the proper collection, preparation, and preservation of plant specimens.
3. Develop skills in the management and organization of herbarium data and specimens.
4. Utilize herbarium resources for research, education, and conservation purposes.
5. Implement modern technologies and methods in herbarium maintenance and data management.

Course Structure

Module 1: Introduction to Herbarium Techniques

- Overview of Herbarium and Its Importance
- Historical Development and Current Practices
- Types of Herbarium Collections

Module 2: Specimen Collection

- Field Collection Techniques
- Proper Handling and Documentation
- Ethical and Legal Considerations in Plant Collection

Module 3: Specimen Preparation and Preservation

- Drying and Pressing Techniques
- Mounting and Labeling Specimens
- Preservation Methods (e.g., Chemical Treatments, Storage)

Module 4: Herbarium Management

- Cataloging and Data Entry
- Digital Herbarium and Database Management
- Maintenance and Storage Best Practices

Module 5: Utilizing Herbarium Collections

- Research Applications and Methodologies
- Educational Uses of Herbarium Specimens
- Conservation and Environmental Monitoring

Module 6: Modern Techniques and Technologies

- Imaging and Digital Documentation
- GIS and Remote Sensing Applications
- Innovations in Specimen Preservation



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Value Added Course

Intellectual Property Development and Commercialization (IPDC)

(UOTVC088)

Session 2022-23

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Intellectual Property Development and Commercialization (IPDC)

Course Description

The Intellectual Property Development and Commercialization (IPDC) course is designed to provide professionals with a comprehensive understanding of how to develop, protect, and commercialize intellectual property (IP). This value-added course explores the entire lifecycle of IP—from initial creation and development through to commercialization and market strategies. Participants will learn how to leverage IP to create value, secure competitive advantages, and drive innovation in their organizations.

Course Highlights

- **Expert Guidance:** Learn from leading IP professionals and commercialization experts.
- **Holistic Approach:** Covers the full spectrum of IP development, protection, and commercialization.
- **Practical Insights:** Engage in hands-on exercises, case studies, and real-world applications.
- **Strategic Focus:** Understand the strategic role of IP in business growth and innovation.
- **Certification:** Earn a certificate of completion to validate your expertise in IP development and commercialization.

Course Objectives:

1. Understand the fundamentals of intellectual property, including its types and significance.
2. Develop effective strategies for IP creation, protection, and management.
3. Navigate the processes of IP commercialization and market entry.
4. Apply best practices and legal frameworks to protect and leverage IP assets.
5. Analyze case studies to understand real-world challenges and solutions in IP development.

Course Structure

Module 1: Introduction to Intellectual Property

- Overview of Intellectual Property (IP)
- Types of IP: Patents, Trademarks, Copyrights, and Trade Secrets
- Importance of IP in Innovation and Business

Module 2: IP Development

- Identifying and Creating IP
- Innovation Management and IP Strategy
- IP Documentation and Record Keeping

Module 3: IP Protection

- IP Legal Frameworks and Regulations
- Filing and Securing IP Rights
- Enforcement and Defense of IP Rights

Module 4: IP Valuation and Commercialization

- Valuing IP Assets
- Commercialization Strategies and Business Models
- Licensing and Partnership Agreements

Module 5: Market Strategies and IP Integration

- Integrating IP into Business Strategy
- Developing IP-Based Products and Services
- Marketing and Sales Strategies for IP-Driven Innovations

Module 6: Case Studies and Practical Applications

- Real-World IP Development and Commercialization Cases
- Group Projects and Presentations
- Problem Solving and Best Practices



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Value Added Course

Nano medicine and Nano formulation of drugs

(UOTVC081)

Session 2022-23

School of Pharmecy

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Nano medicine and Nano formulation of drugs

Course Description

The Nanomedicine and Nano Formulation of Drugs course is designed to explore the innovative field of nanotechnology and its applications in medicine and drug delivery. This value-added course provides a deep dive into the principles, techniques, and advancements in nanomedicine, including the design, development, and evaluation of nano-based drug formulations. Participants will gain practical knowledge and skills to leverage nanotechnology for enhancing drug efficacy, targeting, and delivery.

Course Highlights

- **Cutting-Edge Content:** Learn about the latest developments and technologies in nanomedicine.
- **Expert Faculty:** Engage with leading professionals and researchers in nanotechnology and pharmaceutical sciences.
- **Hands-On Training:** Participate in laboratory exercises and real-world case studies.
- **Innovative Techniques:** Explore advanced nano-formulation strategies and applications.
- **Certification:** Receive a certificate of completion to showcase your expertise in nanomedicine and nano formulation.

Course Objectives:

1. Understand the fundamental principles of nanomedicine and nanotechnology.
2. Design and develop nano-based drug formulations for targeted and efficient drug delivery.
3. Evaluate the physicochemical properties and biological interactions of nanomaterials.
4. Apply advanced analytical techniques to assess the performance and safety of nano-formulations.
5. Navigate the regulatory and ethical considerations associated with nanomedicine.

Course Structure

Module 1: Introduction to Nanomedicine

- Basics of Nanotechnology
- Nanomedicine Overview and Applications
- Key Concepts and Terminology

Module 2: Principles of Nano Formulation

- Nanoparticle Design and Synthesis
- Methods of Nano Formulation
- Surface Modification and Functionalization

Module 3: Characterization and Evaluation

- Techniques for Nanoparticle Characterization (TEM, SEM, DLS)
- Assessment of Drug Release and Stability
- Biological Interactions and Toxicology

Module 4: Drug Delivery Systems

- Nano-carriers for Drug Delivery (Liposomes, Nanospheres, Nanocapsules)
- Targeted and Controlled Release Systems
- Clinical Applications and Case Studies

Module 5: Regulatory and Ethical Considerations

- Regulatory Framework for Nanomedicine
- Safety and Efficacy Requirements
- Ethical Issues in Nanotechnology

Module 6: Practical Applications and Case Studies

- Real-World Examples of Nano Formulations
- Hands-On Laboratory Exercises
- Group Projects and Presentations



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Value Added Course

Patents & IPR in pharmacy

(UOTVC087)

Session 2022-23

School of Pharmacy

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Patents & IPR in pharmacy

Course Description

The Patents & Intellectual Property Rights (IPR) in Pharmacy course is designed to provide a thorough understanding of how intellectual property laws apply to the pharmaceutical industry. This value-added course covers the essentials of patent law, intellectual property rights, and their impact on pharmaceutical research, development, and commercialization. Participants will gain insights into protecting innovations, navigating patent applications, and leveraging IPR for competitive advantage in the pharmaceutical sector.

Course Highlights

- **Expert Faculty:** Learn from experienced intellectual property attorneys and pharmaceutical industry professionals.
- **Comprehensive Content:** Covers key aspects of patents and IPR specific to the pharmaceutical industry.
- **Practical Insights:** Gain hands-on experience with patent applications and IPR strategies.
- **Case Studies:** Analyze real-world cases to understand the practical implications of IPR in pharmacy.
- **Certification:** Earn a certificate of completion to validate your expertise in pharmaceutical patents and IPR.

Course Objectives:

1. Understand the fundamentals of intellectual property rights and their relevance to the pharmaceutical industry.
2. Navigate the patent application process, including drafting and filing patents.
3. Protect pharmaceutical innovations and manage intellectual property portfolios.
4. Analyze case studies to understand the strategic use of IPR in pharmaceutical research and commercialization.
5. Leverage IPR strategies to gain a competitive advantage and enhance business opportunities.

Course Structure

Module 1: Introduction to Intellectual Property Rights (IPR)

- Overview of Intellectual Property
- Types of IPR: Patents, Trademarks, Copyrights, and Trade Secrets
- Importance of IPR in the Pharmaceutical Industry

Module 2: Fundamentals of Patent Law

- Basics of Patent Law and Principles
- Types of Patents: Utility, Design, and Plant Patents
- Patentable Inventions and Novelty Requirements

Module 3: Patent Application Process

- Preparing and Drafting Patent Applications
- Filing and Prosecution of Patents
- International Patent Protection and PCT Applications

Module 4: Patent Strategy and Management

- Developing a Patent Strategy
- Patent Portfolio Management
- Licensing and Collaboration Agreements

Module 5: Intellectual Property Rights in Drug Development

- Role of IPR in Drug Discovery and Development
- Patent Issues in Clinical Trials and FDA Approval
- Managing IPR in Pharmaceutical R&D

Module 6: Case Studies and Real-World Applications

- Analysis of Key Pharmaceutical Patent Cases
- Case Studies on IPR Strategies in Pharma
- Practical Exercises in Patent Drafting and Filing



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Value Added Course

Preformulation studies

(UOTVC041)

Session 2022-23

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Preformulation studies

Course Description:

Preformulation Studies play a critical role in the development of pharmaceutical formulations. This value-added course is designed to provide participants with a comprehensive understanding of the fundamental and advanced concepts of preformulation studies. Participants will learn how to assess and analyze the physical and chemical properties of drug substances and their interactions with excipients, ensuring the development of stable, effective, and high-quality pharmaceutical products.

Course Highlights

- **Expert Instructors:** Learn from industry professionals with extensive experience in pharmaceutical development and preformulation studies.
- **Hands-On Training:** Engage in practical exercises and case studies to apply theoretical knowledge.
- **Cutting-Edge Techniques:** Explore the latest technologies and methodologies used in preformulation studies.
- **Comprehensive Curriculum:** Covers key aspects from physicochemical properties to compatibility testing.
- **Certification:** Receive a certificate upon successful completion, enhancing your professional credentials.

Course Objectives:

1. Understand the role and importance of preformulation studies in drug development.
2. Analyze the physical and chemical properties of drug substances and their effects on formulation stability.
3. Evaluate the interactions between drug substances and excipients.
4. Apply techniques for characterizing and improving drug formulations.
5. Develop skills in interpreting preformulation data and making informed decisions in formulation design.

Module 1: Introduction to Preformulation Studies

- Overview of Preformulation
- Importance in Drug Development
- Regulatory Considerations

Module 2: Physicochemical Properties of Drug Substances

- Solubility and Permeability
- Stability and Degradation
- Particle Size and Morphology

Module 3: Excipients and Formulation Development

- Types of Excipients and Their Functions
- Compatibility Studies
- Formulation Strategies

Module 4: Analytical Techniques and Methods

- Spectroscopy and Chromatography
- Microscopy and Rheology
- Stability Testing Methods

Module 5: Case Studies and Practical Applications

- Real-World Scenarios and Problem Solving
- Data Interpretation and Decision Making
- Group Projects and Presentations

Module 6: Advanced Topics and Future Trends

- Novel Formulation Techniques
- Emerging Technologies
- Future Directions in Preformulation

Course Outcomes

By the end of this course, participants will be able to:

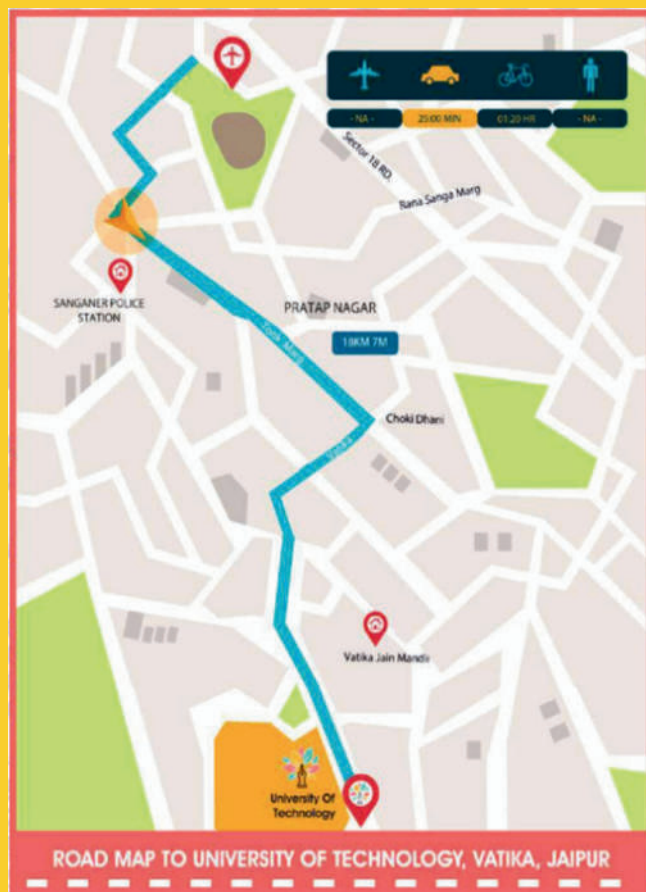
- Demonstrate a thorough understanding of preformulation studies and their significance.
- Conduct and interpret physicochemical tests on drug substances.
- Assess and select appropriate excipients for formulation development.
- Apply analytical techniques to evaluate formulation stability and performance.
- Develop and optimize pharmaceutical formulations based on preformulation data.

Who Should Join?

- Pharmaceutical Scientists and Researchers looking to enhance their knowledge in formulation development.
- Formulation Chemists seeking to deepen their understanding of preformulation studies.
- Quality Control and Quality Assurance Professionals involved in drug development processes.
- Graduate Students in pharmaceutical sciences or related fields.
- Industry Professionals aiming to stay updated with the latest trends and technologies in drug formulation.

Enrolment Information:

- Start Date: 22/7/2022
- Duration: 22/7/2022 to 25/08/2022
- Mode: Off Line
- Fees: Free



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Post Kumhariawas, Vatika, Jaipur, Rajasthan -
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Value Added Course

Standardization of herbal formulations

(UOTVC080)

Session 2022-23

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Standardization of herbal formulations

Course Description

The Standardization of Herbal Formulations course provides a detailed understanding of the principles and practices involved in the standardization and quality control of herbal products. As the demand for herbal medicines continues to rise, ensuring the consistency, safety, and efficacy of these products is paramount. This course covers methods and techniques for evaluating and standardizing herbal formulations, including quality assurance, regulatory requirements, and modern analytical techniques.

Course Highlights

- **Expert Instruction:** Learn from leading experts in herbal medicine and quality control.
- **Hands-On Training:** Participate in practical exercises and real-world case studies.
- **Advanced Techniques:** Explore cutting-edge methods for herbal standardization.
- **Comprehensive Coverage:** Includes quality control, regulatory aspects, and formulation practices.
- **Certification:** Earn a certificate of completion to enhance your professional credentials.

Course Objectives:

1. Understand the principles and importance of standardizing herbal formulations.
2. Implement quality control measures to ensure consistency and safety.
3. Apply analytical techniques to evaluate herbal products.
4. Comply with regulatory requirements for herbal product standardization.
5. Develop skills in formulating and assessing herbal products for market readiness.

Course Structure

Module 1: Introduction to Herbal Formulations

- Overview of Herbal Medicine
- Importance of Standardization
- Challenges and Opportunities in Herbal Formulation

Module 2: Principles of Standardization

- Definitions and Standards
- Quality Assurance in Herbal Products
- Regulatory Guidelines and Compliance

Module 3: Analytical Techniques for Herbal Products

- Phytochemical Analysis
- Chromatography (HPLC, TLC)
- Spectroscopy (UV-Vis, NMR)

Module 4: Quality Control and Assurance

- Testing for Purity, Potency, and Safety
- Stability Testing and Shelf Life
- Documentation and Record Keeping

Module 5: Formulation Development

- Designing Herbal Formulations
- Selection and Preparation of Herbal Ingredients
- Evaluation of Formulation Efficacy

Module 6: Regulatory Requirements and Market Standards

- Understanding Global and Local Regulations
- Certification and Labeling Requirements
- Navigating the Approval Process



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Value Added Course

**Taxonomical aid
(UOTVC096)**

Session 2022-23

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Taxonomical aid

Course Description

The Taxonomical Aid course is designed to provide participants with essential skills and knowledge in the field of taxonomy and classification of organisms. This value-added course focuses on the practical aspects of identifying, classifying, and documenting biological specimens, using both traditional and modern taxonomical tools and techniques. Participants will gain hands-on experience in specimen preparation, data recording, and the use of taxonomical aids to support research and conservation efforts.

Course Highlights

- **Expert Instruction:** Learn from experienced taxonomists and field experts.
- **Hands-On Training:** Engage in practical exercises and specimen-based activities.
- **Modern Techniques:** Explore advanced tools and technologies in taxonomy.
- **Comprehensive Coverage:** Learn about both traditional and digital taxonomical methods.
- **Certification:** Obtain a certificate of completion to enhance your professional qualifications.

Course Objectives:

1. Understand the principles and importance of taxonomy and classification.
2. Utilize traditional and modern taxonomical aids for accurate identification and classification.
3. Prepare and document biological specimens effectively.
4. Apply best practices in specimen preservation and data management.
5. Integrate taxonomical data into research and conservation efforts.

Course Structure

Module 1: Introduction to Taxonomy

- Basics of Taxonomy and Classification
- Historical Perspectives and Current Trends
- Importance of Taxonomy in Research and Conservation

Module 2: Taxonomical Aids and Tools

- Traditional Taxonomical Aids (Field Guides, Dichotomous Keys)
- Modern Tools (Molecular Techniques, Digital Databases)
- Choosing the Right Aids for Specific Applications

Module 3: Specimen Collection and Preparation

- Techniques for Collecting Biological Specimens
- Proper Preparation and Preservation Methods
- Labeling and Documentation Standards

Module 4: Identifying and Classifying Specimens

- Using Dichotomous Keys and Field Guides
- Application of Molecular and Genetic Tools
- Practical Exercises in Specimen Identification

Module 5: Data Management and Documentation

- Recording and Managing Taxonomical Data
- Digital Tools for Data Entry and Analysis
- Integrating Data into Research and Conservation Projects

Module 6: Case Studies and Practical Applications

- Analysis of Taxonomy Case Studies
- Group Projects on Specimen Identification and Classification
- Real-World Applications and Problem-Solving