

(Sponsored by the Exhibition Society), Tamaka, Secunderabad Affiliated to Osmania University, Approved by AICTE & PCI ISO 9001: 2015 Certified Institution, NBA Accredited B. Pharmacy Course

List of Courses for the AY 2018-19

S. No	Name of the Course
1	Pharmacological Screening of Natural Products in Drug Discovery and Development
2	Cardiology Pharmacy
3	Intelligent Biosensors for Drug Delivery Monitoring
4	Predicting activity: How molecular Descriptors drive Drug Design
5	Advanced HPLC in Pharmaceutical analysis

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Value added course on "Pharmacological Screening of Natural Products in Drug Discovery and Development"

Course Assessment

Time: 10 min

Marks: 10

- 1. What is the primary objective of pharmacological screening of natural products in drug discovery and development?
 - a) To identify potential drug candidates from natural sources
 - b) To determine the shelf life of natural products
 - c) To study the geological origins of natural products
 - d) To enhance the flavour and aroma of natural products

2. Which of the following is NOT a common source of natural products for pharmacological screening?

- a. Plants
- b. Fungi
- c. Synthetic compounds
- d. Marine organisms

3. What role do bioassays play in the pharmacological screening process?

- a. They provide information on the physical characteristics of natural products.
- b. They assess the safety of natural products for human consumption.
- c. They evaluate the biological activity of natural products against specific targets.
- d. They determine the market demand for natural products.

4. Which of the following techniques is commonly used to isolate bioactive compounds from natural products?

- a. Polymerase Chain Reaction (PCR)
- b. High-Performance Liquid Chromatography (HPLC)
- c. Nuclear Magnetic Resonance (NMR) spectroscopy
- d. Polymerase Chain Reaction (PCR)

5. What is the significance of high-throughput screening in pharmacological studies of natural products?

- a. It allows for the rapid screening of a large number of natural products for biological activity.
- b. It focuses exclusively on synthetic compounds, excluding natural products.
- c. It minimizes the need for in vivo studies, saving time and resources.
- d. It relies solely on anecdotal evidence rather than scientific data.

6. Which of the following statements best describes the process of lead compound identification in drug discovery from natural products?

- a. It involves randomly selecting natural products for further investigation.
- b. It entails identifying bioactive compounds with promising pharmacological properties.

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- c. It solely relies on computational modelling without experimental validation.
- d. It involves selecting compounds based on their physical appearance.

7. What is the significance of ethno pharmacology in pharmacological screening of natural products?

- a. It focuses on the study of synthetic compounds rather than natural products.
- b. It involves the investigation of traditional medicinal practices and indigenous knowledge.
- c. It relies solely on animal studies for pharmacological evaluation.
- d. It is primarily concerned with cosmetic applications of natural products.

8. Which of the following factors contributes to the variability in bioactive compounds found in natural products?

- a. Environmental conditions
- b. Genetic makeup of the organisms
- c. Processing methods
- d. All of the above

9. In drug discovery and development, what is the significance of determining the mechanism of action of bioactive compounds?

- a. It helps in determining the market potential of the drug.
- b. It aids in understanding how the drug interacts with biological targets.
- c. It determines the colour and texture of the final drug product.
- d. It minimizes the need for preclinical and clinical trials.

10. Which stage of drug development follows pharmacological screening of natural products?

- a. Clinical trials
- b. Market approval
- c. Patent filing
- d. Preclinical studies

Feel free to adapt these questions based on the specific focus and content of your Value-added course.

1	2	3	4	5	6	7	8	9	10
а	С	С	b	а	b	b	d	b	а

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Value Added Course on "Cardiology Pharmacy" <u>Course Assessment</u>

Time: 10 mins

Marks: 10

Please tick the right answer:

1. What is the primary objective of the "Cardiology Pharmacy" program?

- a. To learn about general pharmacy practices
- b. To provide insights into cardiology research
- c. To equip participants with knowledge in cardiology pharmacotherapy
- d. To explore advancements in emergency medicine

2. What was the main focus of the workshop conducted during the program?

- a. Blood pressure monitoring techniques
- b. Medication adherence strategies
- c. Emergency response simulations
- d. Lipid-lowering therapies

3. In which area did the program emphasize multidisciplinary collaboration?

- a. Gastroenterology
- b. Endocrinology
- c. Cardiology and diabetes management
- d. Pulmonology

4. What is the unique consideration in medication management discussed for geriatric cardiology patients?

- a. Hypertension
- b. Diabetes
- c. Nutritional aspects
- d. Anticoagulation

5. Which session covered the role of pharmacists in the catheterization lab during interventional cardiology procedures?

- a. Day 5
- b. Day 7
- c. Day 9
- d. Day 11

6. What was the primary educational format used in the Course?

- a. Case studies
- b. Interactive quizzes
- c. Group projects
- d. All of the above

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7. What was the overarching goal of the group projects in the Course?

- a. To foster competition among participants
- b. To encourage practical application of knowledge
- c. To promote individual work over teamwork
- d. To minimize participant engagement

8. Which of the following was a key topic covered during the Course closing session?

- a. Blood pressure monitoring
- b. Future trends in cardiology pharmacy
- c. Nutritional aspects in cardiovascular health
- d. Emergency response simulations

9. How many days did the "Cardiology Pharmacy" Course run?

- a. 7 days
- b. 10 days
- c. 12 days
- d. 15 days

10. What was the primary focus of the Course objective related to anticoagulation expertise?

- a. Assessing and managing anticoagulant therapy
- b. Emergency response simulations
- c. Nutritional aspects in cardiovascular health

d. Geriatric cardiology care Feel free to adapt these questions based on the specific focus and content of your certificate course.

Feel free to adapt these questions based on the specific focus and content of your Value-Added course.

Answers for the multiple-choice questions

Question	1	2	3	4	5	6	7	8	9	10
Answer	с	с	С	а	с	а	b	а	b	а

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Value Added Course on "Intelligent Biosensors for Drug Delivery Monitoring" <u>Course Assessment</u>

Time: 10 mins

Marks: 10

Please tick the right answer:

- 1. What is a key advantage of using intelligent biosensors for drug delivery monitoring compared to traditional methods?
 - a) Reduced cost
 - b) Increased patient compliance
 - c) Real-time data collection and analysis
 - d) Improved drug efficacy regardless of dosage
- 2. Which of the following is NOT a typical component of an intelligent biosensor for drug delivery monitoring?
 - a) Biorecognition element (e.g., enzymes, antibodies)
 - b) Signal transducer (e.g., electrodes, optical sensors)
 - c) Processing unit (e.g., microcontrollers, AI algorithms)
 - d) Power source (e.g., batteries, biofuel cells)
- 3. One potential challenge of using implantable biosensors for drug delivery monitoring is: a) Biocompatibility concerns
 - b) Limited communication range with external devices
 - c) Difficulty miniaturizing the technology
 - d) All of the above
- 4. Which type of intelligent biosensor might be used to monitor the release of a drug with a short half-life?
 - a) Electrochemical sensor
 - b) Implantable microfluidic device
 - c) Genetically modified cells
 - d) Magnetic resonance imaging (MRI)
- 5. How can intelligent biosensors help personalize drug therapy?
 - a) By providing feedback on individual patient responses to medication
 - b) By adjusting drug dosage based on real-time measurements
 - c) By identifying side effects and potential drug interactions
 - d) All of the above
- 6. Data security and privacy are crucial concerns when using intelligent biosensors. What is one way to address these concerns?
 - a) Employing strong encryption methods
 - b) Providing patients with transparent data access and control

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- c) Storing data only on local devices
- d) Limiting data collection to essential medical information
- 7. The future of intelligent biosensors for drug delivery monitoring is likely to involve:
 - a) Integration with advanced wearable devices
 - b) Development of biocompatible and biodegradable sensors
 - c) Machine learning algorithms for improved data analysis
 - d) All of the above
- 8. Which ethical consideration should be carefully addressed when developing and implementing intelligent biosensors for drug delivery monitoring?
 - a) Potential for discrimination based on collected data
 - b) Accessibility and affordability for all patients
 - c) Overreliance on sensor data for clinical decision-making
 - d) All of the above
- 9. What is a potential application of intelligent biosensors beyond drug delivery monitoring?
 - a) Disease diagnosis and early detection
 - b) Remote patient monitoring and chronic disease management
 - c) Personalized nutrition and fitness tracking
 - d) All of the above

10. As a user of a drug delivery system with intelligent biosensor monitoring, what information might you be able to access through a dedicated app?

- a) Drug remaining in the delivery system
- b) Real-time measurements of drug concentration in your body
- c) Personalized dosage recommendations based on your response
- d) All of the above

Feel free to adapt these questions based on the specific focus and content of your Value Added Course.

Answers for the multiple choice questions

Question	1	2	3	4	5	6	7	8	9	10
Answer	С	d	d	b	d	а	d	d	d	d

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Course Assessment

Predicting Activity: How Molecular Descriptors Drive Drug Design

Quiz Questions and Answers

Question 1: What are molecular descriptors?

A) The physical properties of molecules

- B) Quantitative descriptions of the chemical compounds that can help predict drug activity
- C) The biological activities of molecules
- D) The chemical reactions of drug molecules

Answer: B) Quantitative descriptions of the chemical compounds that can help predict drug activity

Question 2: Which of the following is NOT a type of molecular descriptor?

- A) Topological
- B) Electronic
- C) Hydrophobic
- D) Pharmacological
- Answer: D) Pharmacological

Question 3: What role do molecular descriptors play in drug design?

- A) They predict the color of the drug
- B) They determine the manufacturing process of the drug
- C) They help in predicting the pharmacokinetics and pharmacodynamics properties of drugs
- D) They are used to design the packaging of drugs

Answer: C) They help in predicting the pharmacokinetics and pharmacodynamics properties of drugs

Question 4: Which computational tool is commonly used for the prediction of drug activity based on molecular descriptors?

- A) Microsoft Excel
- B) Quantum Mechanics
- C) Molecular Dynamics Simulations
- D) Quantitative Structure-Activity Relationship (QSAR) models

Answer: D) Quantitative Structure-Activity Relationship (QSAR) models

Question 5: What is ADMET an acronym for?

A) Absorption, Digestion, Metabolism, Excretion, Toxicity

- B) Absorption, Distribution, Metabolism, Excretion, Toxicity
- C) Allocation, Distribution, Management, Efficiency, Toxicity
- D) Absorption, Distribution, Modification, Evaluation, Treatment

Answer: B) Absorption, Distribution, Metabolism, Excretion, Toxicity

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Question 6: Why are molecular descriptors important in ADMET prediction?

A) They provide the molecular weight of the drug only.

- B) They allow for the prediction of a drug's behaviour in the human body.
- C) They are only used for predicting toxicity.
- D) They are not important in ADMET prediction.

Answer: B) They allow for the prediction of a drug's behaviour in the human body.

Question 7: Which of the following best describes the importance of computational tools in drug design?

A) They reduce the need for clinical trials.

B) They exclusively determine the drug's color and shape.

C) They enable the prediction and optimization of drug activity and properties before synthesis.

D) They are used for packaging design only.

Answer: C) They enable the prediction and optimization of drug activity and properties before synthesis.



Dr. Vemuri Jyothi PRINCIPAL

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Value Added Course on "Advanced HPLC in Pharmaceutical Analysis" <u>Course Assessment</u>

Time: 10 mins

Marks: 10

Please tick the right answer:

1. What is the main driving force for the separation of components in HPLC?

- A) Centrifugation
- B) Filtration
- C) Pressure
- D) Temperature

2. Which parameter is commonly monitored in pharmaceutical HPLC analysis?

- A) Flow rate
- B) Retention time
- C) Injector temperature
- D) Detector wavelength

3. Which type of HPLC separation is based on the size of the molecules?

- A) Normal Phase HPLC
- B) Reverse Phase HPLC
- C) Size Exclusion Chromatography
- D) Ion Exchange Chromatography

4. In which type of HPLC does the mobile phase contain a higher percentage of polar solvent?

- A) Normal Phase HPLC
- B) Reverse Phase HPLC
- C) Ion Exchange Chromatography
- D) Affinity Chromatography

5. What is the purpose of a detector in HPLC instrumentation?

- A) To pump the mobile phase
- B) To analyze the sample components
- C) To control the column temperature
- D) To mix the mobile phase

6. Which component of the HPLC instrument is responsible for maintaining constant pressure in the system?

- A) Pump
- B) Injector
- C) Column
- D) Detector

7. In HPLC, what is the function of the mobile phase?

- A) Interact with the stationary phase
- B) Separate sample components based on size
- C) Provide pressure for the system
- D) Carry the sample through the column

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8. Which type of HPLC column is packed with a polar stationary phase?

- A) C18 column
- B) C8 column
- C) Normal phase column
- D) Reversed phase column

9. What is the purpose of sample preparation in HPLC?

- A) To increase column efficiency
- B) To reduce analysis time
- C) To enhance sensitivity
- D) All of the above

10. What does "retention time" refer to in HPLC?

- A) Time taken for a sample to pass through the detector
- B) Time taken for a sample to be injected
- C) Time taken for a sample component to elute from the column
- D) Time taken for a sample to reach the column

Feel free to adapt these questions based on the specific focus and content of your certificate course. Answers for multiple choice questions:

Question	1	2	3	4	5	6	7	8	9	10
Answer	С	D	С	А	В	А	D	С	D	С



for successful completion of VALUE ADDED COURSE on "ADVANCED HPLC IN PHARMACEUTICAL ANALYSIS"

Held from 01.03.2019 to 20.03.2019

Dr. Vemuri Jyothi Principal



T. Carityos

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