

DCOP Subjectwise Course Outcome - [Pharmaceutical Quality Assurance - 2021-22]

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MQAIOTT COLD Remember and understand the electromagnetic spectrum, spectroscopy and its importance in Pharmaceutical analysis. MQAIOTT COLD Research the insurumentation of various spectro analytical techniques. MQAIOTT COLD Research the insurumentation of various spectro analytical techniques for the qualitative and quantitative analysis. MQAIOTT COLD RESEARCH THE PRINCIPLE INTERIOR OF THE PRINCIPLE INTERIOR OF THE QUARTER OF THE QUAR	Modern Pha	maceutical Analytical Techniques [Theory Regular]
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	CO3	Students must be well versed in chromatographic techniques like, HPLC, Gc, Column chromatography, paper and Thin layer chromatography etc.
Students must study different case studies on Total Quality management, Six sigma, Out of specification (OOS) and Corrective and preventaction (CAPA).	CO4	Students must study different case studies on Total Quality management, Six sigma, Out of specification (OOS) and Corrective and preventive action (CAPA).

CO ID.	Course Outcome	
CO1		
	The importance of quality and Quality Management System.	
CO2	ISO management systems, Identify requirements of quality improvement programs.	
	Tools for quality improvement. To realize the importance of significance of quality.	
CO4	Analysis of issues in quality. Manage quality improvement teams	
CO5	Quality evaluation of pharmaceuticals.Customer Satisfaction, Employee Involvement, Continuous Process Improvement, Supplier Partnership, Performance Measures.	
CO6	Stability testing of drug product and drug substances.	
CO7	Statistical approaches for quality. Bench marking, Quality Function Deployment.	
MQA103T Qu	ality Control and quality Assurance [Theory Regular]	
CO ID.	Course Outcome	
COI	Students should understand the cGMP principles in pharmaceutical industry, GLP, ICH guidelines and CPCSCA guidelines.	
CO2	Students should learn about Schedule M, Pharmaceutical inspection convention (PIC), EMEA, WHO and Good warehousing practices.	
CO3	Students should acquire knowledge of Analysis of raw materials, finished products, packaging materials, in process quality control (IPQC).	
CO4	Students should learn basic principles, maintenance, retention and retrieval of documentation.	
CO5	Students should understand manufacturing processes and control measures in pharmaceutical industry.	
Second Sem	ester	
Pharmaceut	cal Validation [Theory Regular]	
CO ID.	Course Outcome	
COI	To understand the concept of calibration, qualification & validation.	
CO 2	To know the qualification of various equipment's & utility systems	
CO 3	To understand the process validation & cleaning validation	
CO 4	To understand the principles & roles of intellectual property rights.	
Pharmaceut	cal manufacturing technology [Theory Regular]	
CO ID.	Course Outcome	
MQA204T.1	CO1. Acquire knowledge about common practice in pharmaceutical industry development, Plant layout ,production planning and legal regulatory aspect require to setup a pharmaceutical industry.	
MQA204T.2	CO2. Know about the important of principle and practices of aseptic technology, packaging technology and manufacturing technology.	
MQA204T.3	CO3. To apply knowledge gain to identify problem and measures to assure quality and stability of pharmaceuticals.	
MQA204T.4	CO4. To apply and implement modern tool in pharmaceutical manufacturing remain up to date about FDA initiatives on PAT and QbD.	
Literature review & preclinical studies [Theory Regular]		
CO ID.	Course Outcome	
COI	To know various parts of review and research paper, Abstract, Introduction, Keywords, graphical abstract, material and methods, result and discussion, figures, tables, summary or conclusion, conflict of interest, reference writing.	
CO2	To know Types of journals and journal finding, role of impact factor in selecting journal, role of language and effective writing on the article selection	
CO3	To know Various tools used in the writing of research or review articles: use of MS words, PubMed, Mendley software, google search, google scholar	
CO4	To know the detailed preclinical studies	
Structural elu	ucidation [Theory Elective]	
CO ID.	Course Outcome	
SET.1	COI To study of range of EMR and their parameter, Wavelength, frequency, velocity, different types of electronics transition and Woodward fisher rule for conjugated compounds.	
SET.2	CO.2 To understand problems based on joint applications of UV, IR, 1H NMR, 13C NMR and Mass spectroscopy	
Pharmaceut	cal Quality assurance-II [Practical Regular]	

CO ID.	Course Outcome
CO1	Students must be able to handle various spectroscopic instruments like Uv-Visible spectrophotometer, Colorimeter, Fluorimeter, IR, Flame photometer and Nepheloturbidometer.
CO2	Students must be well versed in chromatographic techniques like, HPLC, Gc, Column chromatography, paper and Thin layer chromatography etc.
CO3	Student must understand qualification of pharma equipments like Autoclave, Hot air oven, Powder mixer, dossolution apparatus, Friability apparatus etc.
CO4	Students must be able to prepare checklists for tablet production, sterile production area, water for injection, bulk vendors etc.
MPA 203T A	udit & Regulatory compliance [Theory Regular]
CO ID.	Course Outcome
CO1	Discuss briefly about audit objectives and their management
CO2	Understand the role of quality systems and audits in pharmaceutical manufacturing environment
CO3	Frame a checklist for auditing pharmaceutical industries
CO4	Lean the requirements for auditing vendors supplying various materials and equipments
CO5	Understand the audition of a microbiological laboratory
CO6	Learn the auditing of quality assurance systems
CO7	Understand the basics of auditing various engineering systems in a manufacturing plant
CO8	Learn about audit report and classification of deficiencies
MQA201T Ha	zards and safety management [Theory Regular]
CO ID.	Course Outcome
CO1	Students shall be able to understand about environmental problems and impart basic knowledge about environment and its allied problems.
CO2	Students must develop an attitude of concern for the industry environment and must ensure safety standards in pharmaceutical industry.
CO3	Students must get comprehensive knowledge on the safety management.
CO4	Students must empower an idea to clear mechanism and management in different in different kinds of hazards management system.
CO5	students must learn the method of Hazard assessment, procedure, methodology to provide safe industrial atmosphere.