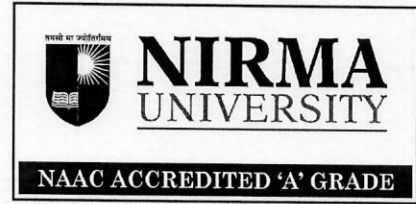


NU/AC/AC-181220/5/20- 122
Date: 20.01.2021



NOTIFICATION

- Read: 1. **R-44 – Empowering the Academic Council to approve Teaching & Examination Scheme, Syllabi, etc published vide notification No. NU-442 dated 27.01.2004 (as amended from time to time)**
2. **Notification No. NU-131 dated 16.10.2017 - Introduction of Teaching & Examination Scheme and Syllabus of Semester-II of M.Pharm and B.Pharm. Programmes**
3. **Notification No. NU-71 dated 05.06.2018 - Introduction of Teaching & Examination Scheme and Syllabus of Semester-III & IV of M. Pharm programmes in pursuance to new curriculum as prescribed by PCI**
4. **Resolution No. 3 – Faculty of Pharmacy meeting– 12.10.2020**
5. **Resolution No. 5 – Academic Council meeting – 18.12.2020**

Sub: **Inclusion of Programme Outcomes of M.Pharm. programmes**

It is hereby notified for information of all concerned that the Academic Council in its meeting held on 18.12.2020 under resolution No. 5 in exercise of powers conferred upon it by the Board of Governors under regulation mentioned at serial 1 above and taking into consideration the recommendations of the Faculty of Pharmacy, has resolved to approve inclusion of Programme Outcomes (PO) of the following **M.Pharm.** programmes, to be made effective from academic year 2020-21 onwards, attached herewith as **Appendix-A**:

- i. Pharmaceutics
- ii. Pharmaceutical Analysis
- iii. Pharmacology
- iv. Pharmaceutical Chemistry
- v. Regulatory Affairs


Executive Registrar

Encl.: Appendix-A [Pages 1 to 5]

- To,
1. Dean, Faculty of Pharmacy
 2. Dy. Registrar (Exam)

- Copy to,
- | | |
|-----------------------|---------------|
| 1. All Heads of Dept. | 4. Library |
| 2. OS | 5. P.A. to ER |
| 3. Exam Sec. | |

c.f.w.cs to: Director General



NIRMA UNIVERSITY
Institute of Pharmacy

Master of Pharmacy
Department of Pharmaceutics

PROGRAMME OUTCOMES

No.	Program Outcomes
PO1	Advanced Knowledge: Possess advanced scientific knowledge of the pharmacy profession so as to apply the learnings in providing solutions for complex issues of the pharmaceutical field.
PO2	Scientific and Technical Skills: Develop analytical skills for effective Scientific writing/presentation, data compilation & interpretation. Obtain erudite technical skills for applying in research and development for improvement of pharmaceutical process and products.
PO3	Critical Thinking: Apply critical thinking to find, analyze, evaluate and apply information systematically and address societal, health, safety and legal issues.
PO4	Professional Identity and Leadership: Assess their professional role in health care society through leadership and entrepreneurship qualities in order to face the challenges of pharmaceutical sector.
PO5	Ethical practice and Societal concern: Demonstrate ethical and caring professional behaviour along with moral values in professional and social context.
PO6	Multidisciplinary Collaborative Research: Ability to work for multidisciplinary and collaborative research to bring out innovative ideas and novel approaches for healthcare needs of the society.
PO7	Life-long Learning: Acquire ability to involve in lifelong learning, update knowledge, skills and competencies to provide optimal pharmaceutical care.

Programme Specific Outcomes

PSO1	Formulation Development and Drug Delivery: Apply in-depth knowledge in the field of Preformulation, formulation design, stability testing using concept of Molecular Pharmaceutics, Biopharmaceutics and Pharmacokinetics for carrying independent research.
PSO2	Optimization skills and Technical training: Ability to systematically evaluate various drug delivery and data analysis using modern tools, software and technical training.
PSO3	Regulatory Compliance: Design and develop product filing as per various statutory/regulatory requirements.

NIRMA UNIVERSITY
Institute of Pharmacy

Master of Pharmacy
Department of Pharmaceutical Analysis

PROGRAMME OUTCOMES

1. **Advanced Knowledge:** Possess advanced scientific knowledge of the pharmacy profession so as to apply the learnings in providing solutions for complex issues of the pharmaceutical field.
2. **Multidisciplinary Collaborative research:** Ability to work for multidisciplinary and collaborative research to bring out innovative ideas and novel approaches for healthcare needs of the society.
3. **Leadership and technical skills:** Acquire leadership qualities of motivation, team building, time management, organizational skills so as to take lead and responsibilities in order to face the challenges of pharmaceutical sector. Obtain erudite technical skills for applying in research and development for improvement of pharmaceutical process and products.

Problem based learning and critical thinking: Develop analytical and critical thinking to find, analyze, evaluate and apply information systematically and address societal, health, safety and legal issues.

4. **Life long learning:** Acquire ability to involve in life long learning, update knowledge, skills and competencies to provide optimal pharmaceutical care.
5. **Professional identity:** Assess their professional role in health care society and contribute positively towards betterment of humankind.
6. **Ethical practice and societal concern:** Demonstrate ethical and caring professional behaviour along with moral values in professional and social context.

Program Specific Outcomes

1. **Quality Assuring /Qualitative Documentation Practice:** Empower the understanding on the importance of documentation in pharmaceutical industry and encourage to practice it in routine.
2. **Excellence in Advance Instrumentation Training:** Acquire in-depth knowledge of spectral data interpretation and hands on training on various modern sophisticated instruments to be competitive in Pharmaceutical industries.
3. **Innovations Leading Analytical Skills:** Sharpen the analytical and bioanalytical method development skills to bring out innovative ideas and novel approaches.



NIRMA UNIVERSITY
Institute of Pharmacy

Master of Pharmacy
Department of Pharmacology

PROGRAMME OUTCOMES

- PO1 **Advanced Knowledge:** Possess advanced scientific knowledge of the pharmacy profession so as to apply the learnings in providing solutions for complex issues of the pharmaceutical field.
- PO2 **Scientific and Technical Skills:** Develop analytical skills for effective Scientific writing/presentation, data compilation & interpretation. Obtain erudite technical skills for applying in research and development for improvement of pharmaceutical process and products.
- PO3 **Critical Thinking:** Apply critical thinking to find, analyze, evaluate and apply information systematically and address societal, health, safety and legal issues.
- PO4 **Professional Identity and Leadership:** Assess their professional role in health care society through leadership and entrepreneurship qualities in order to face the challenges of pharmaceutical sector.
- PO5 **Ethical practice and Societal concern:** Demonstrate ethical and caring professional behaviour along with moral values in professional and social context.
- PO6 **Multidisciplinary Collaborative Research:** Ability to work for multidisciplinary and collaborative research to bring out innovative ideas and novel approaches for healthcare needs of the society.
- PO7 **Life-long Learning:** Acquire ability to involve in lifelong learning, update knowledge, skills and competencies to provide optimal pharmaceutical care.
- PSO1 **Pharmacological Knowledge and skill:** Translate the acquired knowledge of *in-vitro* and *in-vivo* safety and efficacy studies for Drug Discovery and Development. To apply principles of Physiology, Pharmacology, Pathophysiology, Biochemistry, Cellular and Molecular Biology and Bioinformatics in the core and allied fields of Pharmaceutical Sciences.
- PSO2 **Clinical Research Competence:** Apply knowledge of clinical research in designing, monitoring, auditing, and documentation of clinical trials, medical writing including protocol writing, feasibility studies, narratives, publication of clinical studies, and post-marketing surveillance for accountable healthcare.
- PSO3 **Regulatory Compliance:** Appraise laws and guidelines pertaining to preclinical safety and efficacy pharmacology, toxicity testing, clinical trials, pharmacovigilance for regulatory approvals.



NIRMA UNIVERSITY
Institute of Pharmacy

Master of Pharmacy
Department of Pharmaceutical Chemistry

PROGRAMME OUTCOMES

No.	Program Outcomes
PO1	Advanced Knowledge: Possess advanced scientific knowledge of the pharmacy profession so as to apply the learnings in providing solutions for complex issues of the pharmaceutical field.
PO2	Scientific and Technical Skills: Develop analytical skills for effective Scientific writing/presentation, data compilation & interpretation. Obtain erudite technical skills for applying in research and development for improvement of pharmaceutical process and products.
PO3	Critical Thinking: Apply critical thinking to find, analyze, evaluate and apply information systematically and address societal, health, safety and legal issues.
PO4	Professional Identity and Leadership: Assess their professional role in health care society through leadership and entrepreneurship qualities in order to face the challenges of pharmaceutical sector.
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PO6	Multidisciplinary Collaborative Research: Ability to work for multidisciplinary and collaborative research to bring out innovative ideas and novel approaches for healthcare needs of the society.
PO7	Life-long Learning: Acquire ability to involve in lifelong learning, update knowledge, skills and competencies to provide optimal pharmaceutical care.

Program Specific Outcomes

- PSO1 **Rational Drug Design:** Understanding various drug targets, exploring ligand and structure based drug design techniques, molecular modeling approaches and use of various modeling software.
- PSO2 **Drug Synthesis:** Ability to synthesize intermediate and final NCEs for development of hit to lead optimization
- PSO3 **Analytical Skills:** Develop skills in qualitative and quantitative analysis, spectral interpretation and structural characterization



**NIRMA UNIVERSITY
INSTITUTE OF PHARMACY**

M. PHARM. PROGRAMME in Regulatory Affairs

PROGRAMME OUTCOMES (POs)

1. **Advanced Knowledge:** Possess advanced scientific knowledge of the pharmacy profession so as to apply the learnings in providing solutions for complex issues of the pharmaceutical field.
2. **Multidisciplinary Collaborative research:** Ability to work for multidisciplinary and collaborative research to bring out innovative ideas and novel approaches for healthcare needs of the society.
3. **Leadership and technical skills:** Acquire leadership qualities of motivation, team building, time management, organizational skills so as to take lead and responsibilities in order to face the challenges of pharmaceutical sector. Obtain erudite technical skills for applying in research and development for improvement of pharmaceutical process and products.
4. **Problem based learning and critical thinking:** Develop analytical and critical thinking to find, analyze, evaluate and apply information systematically and address societal, health, safety and legal issues.
5. **Lifelong learning:** Acquire ability to involve in lifelong learning, update knowledge, skills and competencies to provide optimal pharmaceutical care.
6. **Professional identity:** Assess their professional role in health care society and contribute positively towards betterment of humankind.
7. **Ethical practice and societal concern:** Demonstrate ethical and caring professional behavior along with moral values in professional and social context.

Program Specific Outcomes (PSO)

1. **Regulatory Professional Skill:** Develop strong skills through exposure to significant regulatory guidelines, projects and case studies during which they translate their knowledge into practice.
2. **Good Regulatory Practices:** Empower understanding of manufacturing, laboratory and clinical practices in healthcare system including regulations and submission process.
3. **Technical Empowerment:** Demonstrate technical enhancement for use of software in global regulatory submissions, database management and use of various resources for preparation of documents as per regulatory requirements including audits and inspections, audit trails, data integrity, query response.

