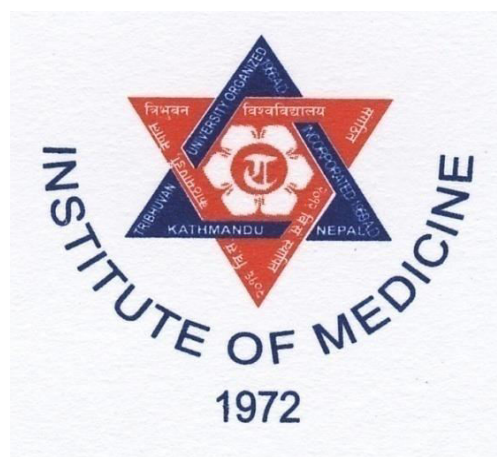


Curriculum
on
Bachelor in Pharmacy
(B. Pharm)



Published by

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DISSERTATION

| | | |
|----------------|-----------------|-----------------|
| Year: Fourth | Full Marks: 100 | Code: BP 705 DT |
| Credit hour: 6 | | |

Course Description: This course will provide the students some knowledge and practice of pharmaceutical research activity, which will enable them to carry out researches and solve problems. This course will also help them in writing scientific papers and defending their findings.

General objectives: After completion of the course the students will be able to carry out simple researches, prepare reports and defend their findings.

Specific Objectives:

At the end of the course, the students will be able to

1. Review scholarly literature collected from various sources critically for the project and formulate a research problem
2. Prepare and present a research proposal
3. Conduct research to achieve research objectives
4. Propose new ideas/ methodologies or procedures for further improvement of the research problem
5. Create research document of the findings
6. Defend the research findings in front of scholarly audience

Report writing contents: The thesis should be related to pharmacy related subjects and contain the following headings:

1. Title
2. Abstract
3. Introduction
 - Background
 - Problem statement
 - Rationale of study/Significance of study
 - Conceptual framework/Theoretical framework
4. Objectives/Research questions
5. Literature review
6. Materials / Methods (Detailed Research Methodology including Sampling design)
7. Results
8. Discussion
9. Conclusion and Recommendation
10. Acknowledgements
11. References (Vancouver Style).

Note: Research proposal for Dissertations should be submitted before final examination of third year. Thesis report should be submitted 30 days before the date of final examination in fourth year.

Evaluation:

Full marks (Thesis defense and viva) –100 Pass marks –50

*The Supervisor will evaluate the student and forward for thesis defense only if the supervisor is satisfied. This will carry a weightage of 50%. The final thesis defense will be evaluated by the external examiners and will carry a weightage of 50%.

The following **minimum core criteria** (which are applicable) will be used for the assessment of Dissertation:

1. Understanding of the topic and its contribution to knowledge
2. Explanation, contextualization and articulation of research problem and objectives
3. Literature and/or technology review, as relevant
4. Appropriate knowledge of and use of research methodology
5. Ability to design and implement an appropriate collection and analysis of data
6. Innovation / creativity / originality
7. Logical coherence and Critical evaluation
8. Comprehensiveness of research
9. Interpretation of results and validity of conclusions
10. Impact of research on the field
11. Oral presentation and defense of thesis/dissertation
12. Utilisation of proper academic [or other] style (e.g. Citation of references)
13. Appropriate spelling / grammar / punctuation

The following factors and percentage weightings are to be taken into consideration by the examiners when assessing the Dissertation:

A. Explanation, contextualization and articulation of research problem and objectives (5%)

1. Is the research problem clearly specified and contextualized?
2. Are the research questions and hypotheses clearly formulated?
3. Does the dissertation capture the relevance, rationale and objectives of the proposed research?

B. Literature and/or technology review, as relevant (15%)

1. Does the dissertation include a comprehensive review and critical discussion of the relevant literature and/or technological developments?
2. Is there a description on how the proposed research positions itself within the generic context of works, which have been published in the area?

C. Presentation, development and explanation of relevant background theory (10%):

1. Is the relevant background theory presented, discussed and explained well? Has the theory been contextualized appropriately within the framework of the research problem being investigated?

2. Have the latest theoretical developments in the area been presented and described?
3. Does the student demonstrate a systematic understanding of the relevant background theory and knowledge?

D. Methodology, design and implementation (35%)

1. Is the adopted methodology and/or design approach clearly justified and described?
2. Is the implementation well explained?
3. Have any novel theoretical contributions from the student been rewarded appropriately?
4. Is there a clear identification of any limitations, assumptions and constraints, which may influence or condition the applied methodology, design approach and implementation?
5. Has any novelty in this regard been rewarded appropriately?

E. Testing, results, analysis and evaluation (25%)

1. Are the test procedures sound and objective?
2. Do the proposed tests address the research problem being investigated?
3. Are the test conditions, assumptions, constraints and limitations clearly identified?
4. Are the results clearly presented, analyzed objectively and critically evaluated?
5. Are the results and analyses discussed objectively? Do they lead to appropriate conclusions and/or fulfillment of the project aims?
6. Does the analysis, evaluation and discussion of results exhibit independence of thought?
7. Has any novelty in this regard been rewarded appropriately?

F. Report structure and organization of dissertation (10%):

1. Is the style and structure of the dissertation logical, coherent, flowing and focused?
2. Is the student's contribution clearly communicated to the reader?
3. Does the dissertation conform to the guidelines?
4. Does it make good use of language, citations, figures and tables?

IN-PLANT TRAINING

| | | |
|----------------|-----------------|-----------------|
| Year: Fourth | Full Marks: 100 | Code: BP 706 IP |
| Credit hour: 4 | | |

Course description: Recognizing the need to develop the ability of translating theory into practice, students will be placed for in-plant training in pharmaceutical manufacturing units and hospitals, at the start of the fourth year.

During the **2 months** dedicated to the In-plant training, the students will carry out/observe the activities under the guidance of the local supervisor in pharmaceutical manufacturing units and hospitals.

- a. Hospitals ----- **4 weeks**
- b. Pharmaceutical Industries ----- **4 weeks**

Specific objectives of Hospital/Clinical Posting.

After the completion of the course, students will be able to

1. Take patients drug history. (Drugs used in past and present illness, any unwanted effects appeared, Allergy with any medicines, medicines taking currently)
2. Identify common medical abbreviations.
3. Evaluate drug-interaction and avoid drug incompatibility.
4. Specify drugs selection (Generic name, Brand name, therapeutic class, combinations available)
5. Outline Pharmacotherapy and non-pharmacological management of following disorders.
6. Discuss Cardiovascular diseases (Hypertension, congestive cardiac failure, ischaemic heart disease, arrhythmias, hyperlipidaemias)
7. Discuss Diseases of nervous system (Parkinsonism, Epilepsy, Stroke, Meningitis, Encephalitis increased Intra Cranial Pressure (ICP).
8. Discuss Diseases related to blood (Anaemias, drug induced haematological disorders)
9. Discuss Diseases of respiratory system (Asthma, chronic obstructive airways disease)
10. Discuss Renal diseases (Acute renal failure, chronic renal failure, drug dosing in renal impairment)
11. Discuss Diseases related with endocrine system (Diabetes, thyroid disease)
12. Discuss Diseases of GIT (GI ulcers, inflammatory bowel diseases, hepatitis, alcoholic liver disease)
13. Discuss Infectious diseases (RTIs, gastro-enteritis, pneumonia, typhoid, UTIs, tuberculosis, leprosy, Dengue fever, protozoal infections and helmenthiasis)

Specific objectives of Hospital pharmacy posting

After the completion of the course, students will be able to

1. Discuss organization and structure of hospital pharmacy.
2. Identify responsibilities of a hospital pharmacist
3. Explain Pharmacy and therapeutic committee and its functioning,
4. Evaluate budget preparation and implementation
5. Discuss hospital formulary: contents, preparation and its revision.
6. Discuss drug store management and inventory control: organization of drug store, types of materials stocked, storage contents; purchase and inventory control principles, purchase procedure, purchase order, procurement and stocking.
7. Explain control of Narcotic drugs and other poisonous drugs
8. Identify and explain drug distribution systems in hospitals: inpatients, outpatients, ambulatory patients
9. Formulate in-hospital manufacturing & its quality control

Specific objectives of Pharmaceutical Industry Posting

After the completion of the course, students will be able to

1. Explain various activities of pharmaceutical industries like plant layout, utilities services, procurement processing, handling, documentation, production, quality control and packaging of various dosage forms, pharmaceutical waste management, storage and quality assurance of the drug products.
2. Interpret in-house experience of GMP and ISO requirements for the pharmaceutical industries.

Evaluation:

Full Marks: 100 Pass Marks: 50

Report writing should include the following:

1. **Industry:** The report should include procurement, processing, handling, documentation, waste management and quality assurance during the various steps from the raw material to the end product of the unit they have been placed.
2. **Hospital pharmacy:** The report should include the purchase of drugs, supply system to wards, dispensing to OPD patients and small-scale manufacturing.
3. **Clinical posting:** The report should include the case studies and pharmacotherapeutic management of different diseases observed in different departments.