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جامعة الأمير سطام بن عبدالعزيز
PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY

Master in Industrial Pharmacy

Research Project Handbook

2025/26

Contents

1. Introduction

The Research Project course (PHT 646) offers students a practical, hands-on opportunity to apply the knowledge gained from previous coursework in industrial pharmacy. Students will engage in independent research to solve real-world pharmaceutical challenges. The course emphasizes key research skills, including problem identification, literature review, experimental design, data collection, and analysis. Project proposals require pre-approval and guidance from the committee. Students will present their findings through a written report and an oral presentation, which will determine their final grade. This course equips students for advanced roles in research and development within the pharmaceutical industry.

You will undertake your project under the supervision of a faculty member from the Department of Pharmaceutics. Your supervisor will provide guidance on project design, experimental planning, data analysis, and the preparation of your final report and oral defense. They will also support your development as an independent researcher and help ensure that your work meets academic standards.

While supervisory support will be available throughout, the project is ultimately your responsibility. You are expected to take initiative in managing your time, planning your activities, recording and analysing data, and submitting your work on schedule. The more effort and commitment you invest, the more rewarding the experience will be both personally and academically.

2. Project Requirements

2.1 Project Eligibility and Scope

Students must have completed core program requirements before starting the project. Research topics should be relevant to the field of study and approved by the department.

2.2 Types of Acceptable Projects

Students undertaking the research project may pursue one of the following types, based on their interests and supervisor expertise. Projects must be relevant to the field of industrial pharmacy and aligned with academic and regulatory standards.

- *Experimental Research*

Laboratory-based investigations related to the development, optimization, characterization, or evaluation of pharmaceutical formulations, drug delivery systems, excipient compatibility, or process development and scale-up.

- *Applied or Industry-Based Projects*

Research conducted in collaboration with pharmaceutical manufacturers or regulatory agencies, focusing on practical challenges in production, quality control, validation, or regulatory compliance.

- *Simulation or Modelling Studies*

Studies employing mathematical or computational models to simulate formulation behaviour, manufacturing processes, stability profiles, or packaging conditions under various scenarios.

- *Artificial Intelligence and Data-Driven Projects*

Research involving the application of AI or machine learning to pharmaceutical data, such as predicting formulation performance, optimizing manufacturing parameters, detecting quality deviations, or automating decision-making in industrial settings.

2.3 Credit Hours and Workload Expectations

The research project typically accounts for 6 credit hours and is expected to reflect approximately 96 hours of student work, distributed across planning, research execution, writing, and presentation.

3. Assessment Overview

3.1 Summary of Assessment Components

The research project is assessed based on the following components:

I. Research Work (50%)

Conducted under the supervision of an approved faculty member who evaluates the student's research performance.

II. Written Report (20%)

A formal report submitted prior to the oral defense, summarizing the research process and findings.

III. Oral Defense (30%)

A presentation and discussion of the project before an examination panel.

Detailed guidelines and evaluation criteria for each component are provided in the following sections.

3.2 Grade Distribution

The mark breakdown for project assessment is detailed below.

1. Summary of Weight Distribution

Component	Total Marks
Supervisor's Marks	50
Oral Defense	30
Written Report	20
Total	**100**

2. Supervisor's Marks – 50 Marks

Criteria	Description	Marks
Lab Attendance & Punctuality	Consistent attendance, timely presence, reliability in lab settings	7
Meeting Deadlines	Submits work, reports, and drafts on time; meets milestones	5
Engagement in Regular Meetings	Actively participates in scheduled meetings, comes prepared	5
Initiative & Problem-Solving	Demonstrates independence, identifies and addresses problems proactively	7
Technical Competence	Skillful use of lab equipment and protocols; ability to generate reliable data	6

Documentation & Record-Keeping	Maintains detailed, accurate lab notebook and project records	5
Professional Conduct & Teamwork	Demonstrates integrity, responsibility, and effective collaboration	5
Progress & Effort	Steady progress, resilience, consistent effort throughout the project duration	5

3. Oral Defence (Presentation and Discussion with Examination Committee) – 30 Marks

Criteria	Description	Marks
Presentation Structure & Content	Logical flow of introduction, methods, results, discussion and conclusions	8
Use of Visual Aids	Professional, legible, and informative slides or figures	4
Oral Communication Skills	Clear, confident, and structured delivery of the presentation	6
Response to Questions	Provides accurate, thoughtful, and well-justified answers; demonstrates understanding	10
Engagement with Discussion	Ability to reflect on results, limitations, and future directions in dialogue with committee	2

3. Written Report – 20 Marks

Criteria	Description	Marks
Structure & Formatting	Adheres to required structure, clear layout, and formatting guidelines	3
Scientific Rigor & Presentation	Correct and clear presentation of data; appropriate use of tables, graphs, and figures	5
Discussion & Interpretation	Deep analysis of findings; connects results to objectives and their implications	5
Comparison with Existing Literature	Effectively relates and contrasts findings with previous studies	4
Academic Writing & Referencing	Clear and coherent writing; accurate referencing and citation of sources	3

3.3 Passing Criteria

Students must:

- Achieve an overall score of 75% or above.
- Submit the final report by the deadline.
- Successfully complete the oral defense.

4. Roles and Responsibilities

4.1 Student Responsibilities

The student is expected to take full responsibility for the execution and completion of their research project. This includes conducting literature reviews, designing and performing experiments or investigations, analyzing data, and writing the final report according to academic and scientific standards. Students must demonstrate initiative, independence, and critical thinking throughout the project, maintain regular communication with their supervisor, and respond constructively to feedback. They are also expected to meet all deadlines outlined in the academic calendar, including proposal submission, progress reports, final report, and oral defense. Additionally, students must comply with all relevant university, college, and departmental guidelines, including those related to research ethics, safety, and academic integrity. It is essential that students understand their supervisor's role is to offer guidance and support—not to carry out the work on their behalf. Full engagement, accountability, and adherence to institutional policies are essential components of a successful research experience.

4.2 Supervisor Responsibilities

Your supervisor will play a key role in guiding you throughout your research project. They will assist you in identifying relevant background literature, refining your research topic, and clearly defining the project aim and objectives. Your supervisor will also support you in developing your experimental plan and selecting appropriate methodologies. If your project

involves any safety or compliance requirements, your supervisor will advise you on the necessary approvals or protocols.

During the research phase, your supervisor will provide regular feedback on your progress, help you interpret your results, and suggest alternative approaches if challenges arise. They will also support you during the writing stage of your report by reviewing drafts and offering constructive feedback. One of their key responsibilities is to help you articulate your findings in a clear, scientific manner. However, it remains your responsibility to ensure that your report is well-written, properly formatted, and thoroughly proofread prior to submission. Your supervisor must approve the final version before it is submitted.

While supervisors offer strategic support and mentorship, the project remains the student's responsibility. It is expected that students demonstrate independence, initiative, and effective time management. Regular meetings with the supervisor are essential to ensure steady progress and to address any challenges that may arise during the course of the project. You are expected to maintain regular communication with your supervisor and agree on a realistic timeline for feedback and milestones. Remember that supervisors have other academic responsibilities, including teaching, supervising other students, and attending conferences. It is essential that you plan ahead, particularly during the final stages of your project, and confirm your supervisor's availability to ensure timely review and submission.

4.3 Examination Committee Role

The examination committee's role includes the following:

- Reviewing the project proposal to assess the scientific quality, feasibility, and relevance of the proposed work.
- Verifying that all required forms and approvals (e.g., ethical clearance, supervisor endorsement) have been properly completed and submitted.
- Evaluating the final report.
- Conducting the oral examination.
- Assigning the final grades based on agreed criteria (out of a total 50 marks).

5. Timeline and Key Milestones

5.1 Project Selection

Tobecompletedduringthefirst few weeks of the semester.

5.2 Proposal Submission

Students are required to submit a signed proposal by the deadline indicated in the academic calendar. The appendix of this handbook includes both the official proposal template and a version annotated with detailed instructions for guidance.

5.3 Progress Report

Students are expected to hold monthly progress meetings with their supervisors and submit corresponding progress reports. A template for the progress report is provided in the appendix of this handbook.

5.4 Final Report Submission

Students must submit the final written report by the deadline specified by the department. The report should follow the prescribed format outlined in the following sections. Timely submission is essential for eligibility to proceed to the oral defense.

5.5 Oral Defense

The oral defense will typically be scheduled during the final weeks of the term. Students will be notified of their assigned defense date and time in advance. The session includes a brief presentation followed by a question-and-answer period with the Examination Committee. Attendance is mandatory.

5.6 Rescheduling and Absence Policy

- Students who do not submit their final report by the specified deadline will not be allowed to proceed to the oral defense.

- Late submissions may not be accepted unless supported by valid, documented reasons and are subject to approval by the Head of Department and the Examination Committee. Absence from the scheduled oral defense without prior approval or a valid,
- documented excuse will result in a failing grade or disqualification from the evaluation process.

6. Project Proposal

6.1 Proposal Format and Content

Students must prepare their project proposal following the standard format provided in the appendix. The proposal should clearly outline the research problem, objectives, methodology, and expected outcomes, ensuring alignment with the academic and scientific standards of the program.

6.2 Approval Process

The proposal must be reviewed and approved by the academic supervisor and submitted for formal evaluation by the Examination Committee. It is the responsibility of the Examination Committee to ensure that the proposed project is scientifically sound, feasible within the allocated timeframe, and compliant with ethical and institutional guidelines. Approval will only be granted once all required forms and endorsements have been completed.

6.3 Ethical and Regulatory Considerations

All research involving human participants, animals, or sensitive data must obtain ethical clearance prior to commencement. The proposal must indicate whether ethical approval is required and include relevant documentation as outlined in the instructions template.

6.4 Submission Guidelines

Proposals must be submitted by the specified deadline through email, as communicated by the department. Students should ensure that the correct proposal template is used and that all required forms are completed and attached.

7. Written Report Guidelines

7.1 Structure and Required Sections

1. Title Page

The layout should follow the official template provided by the program.

Include the following details:

- Official logo of Prince Sattam bin Abdulaziz University.
- Official logo of College of Pharmacy, Department of Pharmaceutics.
- Title of the Report.
- Name of Candidate.
- Name of supervisor(s).
- Date.
- A statement:

''This research project is submitted in partial fulfilment of the requirements for the Master of Industrial Pharmacy.''

2. Coursework Coversheet

Students must include a signed and dated declaration confirming that the content of the thesis is their own work and complies with the university's academic integrity and plagiarism policies. **Please use the official template available in the appendices of this handbook**.

3. Acknowledgements Page

This section may include expressions of gratitude to your supervisor(s), academic staff, laboratory colleagues, and any others who supported your work throughout the project.

4. Abstract Page

The abstract should be a standalone summary of the project, offering a concise overview of:

- Project aims
- Methodology
- Key findings
- Results
- Conclusions

It should not exceed 300 words and must fit on one side of A4 paper. Single line spacing may be used.

5. Contents Page

List all main headings and subheadings with corresponding page numbers.

6. Introduction

Provide a comprehensive review of relevant literature and background information related to your topic. Clearly define the research question and scope of your project. State the objectives of your literature review, including the specific aspects you will focus on and any areas you will exclude.

7. Aims and Objectives

State the overall aim of the research. Summarise the objectives of your project using bullet points. These should outline what you intended to achieve through your research.

8. Experimental Methods

Describe in detail the methodology used in your project. Include information on:

- Materials and methods
- Equipment, databases, or software
- Any specific procedures or protocols

If your methodology is uncommon, provide a brief explanation of its advantages and limitations.

9. Results

Present your findings clearly using appropriate visual tools such as:

- Tables
- Figures
- Charts
- Graphs

Each visual element should be accompanied by a clear explanation of its content and relevance. Ensure the reader understands what each result represents and why it was included.

10. Discussion

Analyse and interpret your results in depth. Compare your findings with published literature and consider whether your work has contributed to new knowledge or raised new questions. Address any discrepancies between your results and existing research. Revisit the questions outlined in the introduction and discuss how your findings relate to them. Reflect on initial expectations versus actual outcomes and explore any practical implications of your results.

Note: The discussion may be presented as a separate section or combined with the results section, depending on what suits your project best and in consultation with your supervisor.

11. Conclusions

Summarise your main findings and their significance in the context of industrial pharmacy. Do not introduce new material. The conclusions should be concise and must not exceed one A4 page.

12. Future Work

Briefly suggest directions for future research or further development of your project. You may also include ideas for practical applications.

13. References

Accurate referencing is a fundamental component of academic research and must be consistently applied throughout your thesis. All sources consulted must be cited appropriately within the text (in-text citations) and listed in full in a reference list at the end of the document.

Proper citation practice not only upholds academic integrity and helps avoid plagiarism but also allows readers to verify and further explore your sources.

Students are strongly encouraged to use reference management tools such as EndNote, EndNote Web, or Mendeley, to organize, and format references efficiently. It is the student's responsibility to ensure consistency and accuracy in referencing, including the correct use of journal title abbreviations. Supervisors should be consulted in cases of uncertainty.

7.2 Formatting and Tips for the Report

- Ensure that the text is justified. Margins at the binding edge should be not less than 4 cm and other margins should be not less than 2 cm. A line spacing of 1.5 should be used throughout except for indented quotations or footnotes, where single spacing is suitable. The font size should be 12 point. Pages must be numbered consecutively in Arabic numerals throughout.
- Make sure that all abbreviations are defined the first time you use them.
- Chemical structures should be drawn using either ChemBioOffice or Chemsketch (do not copy and paste structures from the internet or journals).
- Ensure that all images, figures and graphs are sequentially numbered and that the numbers in the text refer to the correct graphic (e.g. as shown in Figure 6). Ensure that each graphic has a concisely written legend that is sufficiently descriptive so that the graphic can be understood.
- If you reproduce a figure from the literature, be sure to say where it comes from.
- The word limit is 10,000 words and we do not expect the thesis to be longer than 100 pages. Students will be penalised if either the word or page limit is exceeded. The page limit excludes contents pages, acknowledgements, references and appendices. The word count excludes figures, tables, captions, contents pages, acknowledgements, references and appendices.

7.3 Plagiarism Policy

Plagiarism is a serious academic offense and is strictly prohibited. It is defined as the use of another person's ideas, words, data, images, or other intellectual work without appropriate acknowledgment, whether intentionally or unintentionally. This includes copying from published sources, fellow students, internet content, or using text generated by artificial intelligence (AI) tools without proper citation or original contribution. All submitted work must be the student's own. Any form of academic dishonesty, including paraphrasing without citation, submitting someone else's work, or reusing your own previous work without disclosure (self-plagiarism), will be subject to disciplinary action in accordance with university regulations.

With the increasing use of AI tools (e.g., ChatGPT, Grammarly, paraphrasing or summarizing engines), students are reminded that while these tools may support the writing process, they must not be used to replace genuine intellectual engagement or to circumvent the research and writing process. Content generated by AI must be clearly acknowledged and used only in a way that aligns with academic integrity guidelines. Failure to do so constitutes academic misconduct. All final reports will be screened using plagiarism detection software. If plagiarism is detected, the student may be subject to penalties ranging from grade reduction to disqualification from the project or academic program, depending on the severity of the offense. Students are encouraged to seek guidance from their supervisors if they are uncertain about citation practices or the appropriate use of sources and AI tools.

7.4 Submission Instructions

- By the submission deadline an electronic copy (Word of PDF) must be sent to the Head of Department. It is a very good idea to ask one or two of your colleagues to read through
- your report, as well as your supervisor before submission. This will ensure that errors are minimised, and that your report is easy to follow for the reader.

8. Oral Defense

8.1 Format and Duration

The oral defense is a formal presentation and examination of your research project in front the exam committee, usually consisting of faculty members.

Purpose of the Oral Defense:

- To demonstrate your understanding of your research topic.
- To justify your methodology, analysis, and conclusions.
- To respond to critical questions from academic experts.
- To show that you conducted the work independently and with academic integrity.

What Typically Happens:

- You give a short presentation (usually 15–20 minutes) summarizing your research, findings, and conclusions.
- The panel then asks you questions, which may focus on:
  - Your rationale for the research
  - The design of your experiments or methods
  - Interpretation of results
  - The relevance or implications of your findings
  - Gaps, limitations, and future work

8.2 Evaluation Criteria

Evaluation:

The panel uses the oral defense to assess:

- The depth of your knowledge
- The validity of your research
- Your ability to think critically and respond to challenges

Outcome:

Following the oral defense, the possible outcomes include:

- Pass with a mark out of 30, based on the quality of the project and the defense performance.
- Resubmission required, if substantial revisions are needed before a passing grade can be awarded.
- Fail, if the work does not meet the minimum academic standards and cannot be improved through revision.

9. Good Research Practices and Ethics

9.1 Academic Integrity

Students are expected to conduct and present their research with honesty and transparency. All sources of information, data, and ideas must be properly cited in accordance with academic standards to avoid plagiarism or misrepresentation. Plagiarism and academic misconduct will result in disciplinary action in accordance with the university's academic integrity policy, and may lead to failure of the research project.

9.2 Data Handling and Confidentiality

All research results produced during the course of your study are confidential and should not be disclosed to people external to PSAU (unless through the appropriate channels of publishing or presentation at conferences following approval of your supervisor). During your period of study you may have disclosed to you information and research results produced by other researchers in the department, which is necessary to allow you to perform your project. Such information is also confidential to the College of Pharmacy and similarly must not be disclosed by you other than with the consent of your supervisor. The College of Pharmacy encourages publication of your work at national and international conferences and in peer-reviewed journals. Your supervisor will advise you on these possibilities.

9.3 Ethical Approval and Compliance

Any project involving human or animal subjects, sensitive data, or other ethical considerations must comply with the university's ethical guidelines. Students are responsible for securing all necessary ethical approvals prior to commencing any data collection. Failure to obtain timely ethical clearance may result in delays or the rejection of the project. Relevant information and required forms are available on the University's Scientific Research Ethics Committee webpage at:

https://drgs.psau.edu.sa/en/content/2021-02-14-14

9.4 Institutional Resources and Policies

Students should consult the Deanship of Research and Graduate Studies for access to official institutional forms, policies, and regulations relevant to research conduct and graduate study requirements. For the most up-to-date information, please refer to the official website of the Deanship at:

https://drgs.psau.edu.sa/en/node/7222

10. Support and Resources

10.1 Facilities and Equipment

Students may access laboratories, equipment, or software based on availability and approval.

10.2 Research Support Services

Library services are available to assist students in accessing scientific and academic resources.

10.3 Contact Information

For any questions or concerns, please contact your supervisor first. If further assistance is needed, you may reach out to the Course Coordinator or the Head of Department.

11. Appendices

- **Appendix A:** Project Proposal Template
- **Appendix B:** Progress Report Template
- **Appendix C:** Declaration Template

Declaration

The work reported in this report was carried out under the supervision of XXX in PSAU College of Pharmacy from **month to month 202x**. All work is my own unless stated to the contrary and has not been previously submitted for any degree at PSAU or any other university. I have read and understood PSAU's policies on plagiarism, and confirm that I have abided by them in this report.

Signature:_____

Date:_____