جامعة الأمير سطام بن عبدالعزيز
PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY

Master of Industrial Pharmacy

Programme Handbook

2025 - 2026

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1. Introduction to the programme

As the pharmaceutical sector continues to expand nationally and globally, there is a growing demand for professionals with a strong foundation in industrial pharmacy. The Master of Industrial Pharmacy at Prince Sattam bin Abdulaziz University is designed to equip pharmacy graduates with the advanced knowledge and technical expertise required to excel in pharmaceutical manufacturing and quality systems. This programme offers a comprehensive curriculum that bridges academic learning with industrial application, preparing students for key roles in formulation development, quality control, regulatory affairs, and manufacturing operations.

Structured as a non-thesis, course-based degree, the programme includes 15 carefully developed courses totalling 42 credit hours, delivered over two academic years. The curriculum integrates theoretical knowledge with practical training, emphasizing industrial processes, advanced dosage form development, quality assurance systems, and compliance with international regulatory standards. Students will benefit from hands-on training in state-of-the-art laboratories, engagement with industry-relevant projects, and instruction by experienced faculty committed to academic excellence and applied research.

2. Programme Mission and Objectives

Mission:

To prepare competitive pharmaceutical professionals through an enriching academic environment, pioneering research, and robust community partnerships. The Master of Industrial Pharmacy programme supports the development of a knowledge-based economy and society, equipping graduates to excel in the pharmaceutical industry and healthcare sectors. Through a dynamic learning environment, creative thinking, and the application of advanced technologies, graduates are empowered to contribute meaningfully to societal well-being.

Programme Objectives:

1. Enhance Knowledge and Skills: To provide students with a comprehensive understanding of pharmaceutical sciences, including formulation development, drug delivery systems, and quality assurance practices.

2. Research and Innovation: To foster a culture of research and innovation in pharmaceutical sciences, encouraging students to engage in research projects that contribute to the advancement of the field.
3. Professional Development: To prepare graduates for successful careers in the pharmaceutical industry, academia, and regulatory agencies by developing critical thinking, problem-solving, and leadership skills.
4. Regulatory Compliance: To instill a strong understanding of regulatory requirements and Good Manufacturing Practices (GMP) to ensure that graduates can navigate the complexities of pharmaceutical regulations.
5. Interdisciplinary Collaboration: To promote interdisciplinary collaboration among students, faculty, and allied professionals to address current challenges in pharmaceutical sciences.

3. Admission Requirements

General conditions for admissions:

Generally, admissions to the post-graduate studies stipulate the following:

1. The applicant must be a Saudi citizen or a non-Saudi with an official grant for post-graduate studies.
2. The applicant must hold a bachelor's degree in pharmacy or a PharmD degree from a Saudi university or another recognized university.
3. The applicant must be of good reputation, conduct and physically fit.
4. The applicant should submit two letters of recommendations from professors who had taught him.
5. The applicant must be prepared to devote themselves entirely during the period of study for the master's degree.

Department conditions for admissions:

In addition to the admission conditions stated in the unified regulation rules for graduate studies in Saudi universities (rule 13), the applicant must:

1. The general GPA is very good or good with the requirement to obtain a very good estimate in the pharmaceutical courses.

2. The department can develop other conditions such as the required study of courses determined by the department and ask the student to successfully pass them.
3. Obtain 60 or more in the TOFEL-IBT or its equivalent in IELTS exam (4.5) or STEP exam (75) before beginning the programme.
4. Pass a writing exam and personal interview in accordance with the standards defined by the joint commission for the programme.

Transfer Requirements, and Courses Equivalency:

Apply article 30 and 31 of regulation policy of the university for graduate studies.

For more information please visit: https://drgs.psau.edu.sa/en/node/7300

4. Programme Structure and Study Plan

The programme is structured as follows:

- Duration: 2 academic years (full-time)
- Credit hours: The total credit hours for the Master of Science in Industrial Pharmacy programme is 42 credit hours.
- Components:
  - Core Courses
  - Research project

Table 1. Detailed Curriculum Structure – Level 1

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	PHT 610	RESEARCH METHODS & APPLIED BIOSTATISTICS	Required	-	(2+1)	Program-Requirements
	PHT 614	PHYSICAL PHARMACY & PREFORMULATION CONSIDERATIONS	Required	-	(2+1)	Program-Requirements
	PHT 615	DRUG DELIVERY SYSTEMS	Required	-	(3+1)	Program-Requirements

Table 2. Detailed Curriculum Structure – Level 2

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 2	PHT 621	APPLIED PHARMACEUTICAL ANALYSIS	Required	-	(2+1)	Program-Requirements
	PHT 622	DRUG STABILITY	Required	PHT 614	(2+1)	Program-Requirements
	PHT 623	ADVANCED BIOPHARMACEUTICS	Required	-	(2+1)	Program-Requirements
	PHT 627	GOOD MANUFACTURING PRACTICE (GMP) OF PHARMACEUTICAL DOSAGE FORMS	Required	PHT 615	(3+0)	Program-Requirements

Table 3. Detailed Curriculum Structure – Level 3

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 3	PHT 630	SEMINAR -I	Required	-	(0+1)	Program-Requirements
	PHT 631	ADVANCED PHARMACEUTICAL TECHNOLOGY	Required	PHT 627	(2+1)	Program-Requirements
	PHT 632	SCALE-UP TECHNIQUIES & PILOT PLANT	Required	-	(3+0)	Program-Requirements
	PHT 633	REGULATORY AFFAIRS OF PHARMACEUTICAL DOSAGE FORMS	Required	-	(2+0)	Program-Requirements

	PHT 634	DRUG DEVELOPMENT & APPROVAL PROCESSESS	Required	-	(2+0)	Program-Requirements

Table 4. Detailed Curriculum Structure – Level 4

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 4	PHT 640	SEMINAR - II	Required	-	(0+1)	Program-Requirements
	PHT 645	REGISTERATION OF PHARMACEUTICAL DOSAGE FORMS	Required	PHT 632	(2+0)	Program-Requirements
	PHT 646	RESEARCH PROJECT	Required	-	(6+0)	Program-Requirements

5. Course Descriptions

Research Methods and Applied Biostatistics: This course deals with ethics in scientific research and applied statistics in pharmaceutics. This course will address research ethics as well as such topics as authorship and research misconduct. Also, it will emphasize principles of experimental design, methods of data collection, exploratory data analysis, and the use of graphical and statistical tools commonly used by scientists to analyze data. The course will include discussion about classical test theory (p values, scales of measurement, assumptions of analyses, etc.) and application of this theory for various statistical analyses, such as t tests, ANOVA, correlation, regression, and nonparametric analyses.

Physical Pharmacy and Pre-formulation Considerations: This course describes fundamentals of physical pharmacy, physical properties of drug molecules and excipients that can influence formulation performance. Topics include the states of matter, physicochemical properties of drug molecules (Ionic balance, surface chemistry and overall properties). An overview of pharmaceutical excipients used in formulations,

polymorphism in drugs, methods used for determining a polymorphic state, morphology, hygroscopicity, complexation and protein binding, drug-excipient interaction, and the compatibility tests. In addition to applications of polymers as pharmaceutical excipients. The practical part of the course is designed to familiarize students with some relevant subjects belonging to certain topics covered within the context of the theoretical part.

Drug Delivery Systems: This course aims to demonstrate the most recent drug delivery systems. In addition, to study and understand all biological factors affecting drug delivery, the physiochemical factors associated with it, advanced preparation techniques, drug formulations and the development of various drug delivery systems. This course also aims to study advanced preparation techniques, drug formulations, and the development of non-parenteral drug delivery systems that include various methods of use, including oral drug delivery, the oral cavity, the nose, the eye, transdermal, rectal, and vaginal delivery.

Applied Pharmaceutical Analysis: This course gives in-depth knowledge concerning methodology for the analysis of pharmaceuticals in biological samples as well as in pharmaceutical preparations. It also deals with basic analytical techniques such as spectroscopic, chromatographic techniques, mass spectroscopy, and thermal analytical techniques.

Drug Stability: This course is designed to deal with the stability studies ensuring the maintenance of drug quality, safety, and efficacy throughout the shelf life, which are considered a pre-requisite for the acceptance and approval of any pharmaceutical product. These studies are required to be conducted in a planned way, following the guidelines issued by ICH and WHO and or other agencies.

Advanced Biopharmaceutics: This course explores advanced concepts in biopharmaceutics and pharmacokinetics. It covers the absorption, distribution, metabolism, and excretion (ADME) of drugs, including the application of one-compartment and multi-compartment pharmacokinetic models. Students will learn to calculate and interpret pharmacokinetic parameters and understand their relevance in drug development. Topics also include bioavailability and bioequivalence,

biopharmaceutical considerations in drug product design, in vitro drug performance evaluation, and the correlation between in vitro and in vivo data (IVIVC).

Good Manufacturing Practice (GMP)of Pharmaceutical Dosage Forms: This course deals with basic requirements for pharmaceutical and manufacturing quality management. Topics will cover GMP, total quality management, quality costs, and manufacturing quality management, in addition, regulatory aspects, design and performance qualification and documentation. Also, quality control, quality assurance and assessment of various dosage forms. Moreover, validation of pharmaceutical formulation processes and evaluation of dosage forms according to USP, BP, FDA regulations will be covered.

Seminar I: Seminar - I offer an enriching platform for students to transcend conventional coursework boundaries. This coursework propels students into the realm of advanced topics, fostering exploration of cutting-edge developments and specialized fields within pharmaceutical science and technology. Additionally, students will undertake concise reviews on selected topics or specialized articles pertinent to industrial pharmacy and engage in critical evaluation of scientific papers specific to this domain. Through this comprehensive approach, students refine their analytical skills, deepen their understanding of industrial pharmacy, and significantly contribute to the advancement of pharmaceutical science and technology.

Advanced Pharmaceutical Technology: This course provides an overview of the processes that occur in the pharmaceutical industry, with specific reference to the tablets manufacturing and the instruments used for that, including the processes of reducing and enlarging the size of particles, mixing, freeze-drying, spray-drying, tablet manufacturing, coating, and the modern technologies used.

Scale-up Techniques and Pilot Plant: This course deals with the development of scale-up manufacturing processes of pharmaceuticals. Plant design/plant layout of large-scale manufacturing unit for sterile and nonsterile products will be covered. Pilot plant/scale-up techniques, technology transferring procedures from R&D results to a pilot plant, and then to production scale will be determined. The dimensional analysis and scale up in theory and industrial application of pharmaceutical products will be discussed. Finally, the engineering aspects of scale up processes and pilot plant design

of various pharmaceutical dosage forms such as tablets, capsules and liquid dosage forms will be described.

Regulatory Affairs of Pharmaceutical Dosage Forms: This course aims to provide students with a comprehensive understanding of global regulatory compliance and quality assurance in pharmaceutical manufacturing with a focus on FDA, EMA, and SFDA guidelines. The course covers post approval regulation obligations including pharmacovigilance, drug advertising compliance, and manufacturing inspections. Students will have a comprehensive understanding of the regulatory considerations and submissions involved drug approvals such as Investigational New Drug application (IND), New Drug Application (NDA), and Abbreviated New Drug Application (ANDA). Biosimilars regulation will also be explored.

Drug Development and Approval Process: This course aims to provide students with a comprehensive understanding of the drug development process. Students will gain knowledge in designing new drug entities to effectively combat diseases and reverse their effects. They will acquire skills in identifying and evaluating promising compounds through relevant experiments. Additionally, students will learn about the evaluation of preclinical research, including in-vitro and in-vivo studies, to assess the safety and effectiveness of drugs before proceeding to human trials. The course will also cover the application of clinical research principles in drug development, focusing on the design and implementation of clinical trials and the interpretation of drug interactions with the human body. Furthermore, students will be equipped with the necessary knowledge with strategic milestones to obtain regulatory approval for marketing a new drug.

Seminar II: Seminar II in the Master of Science in Industrial Pharmacy program offers students a vital platform to enhance their presentation skills and explore contemporary issues in the field. Through oral presentations focused on chosen topics or specialized articles related to the scope of the students' fields, students deepen their understanding of relevant subject matter aligned with their research proposals. This seminar facilitates effective communication of complex ideas and encourages critical thinking through engaging with current trends and regulatory considerations. The interactive format promotes constructive dialogue among peers, culminating in a final

evaluation through open discussion. Overall, Seminar II empowers students to excel as communicators, critical thinkers, and contributors to the field.

Registration of Pharmaceutical Dosage Forms: This course focuses on the rules regulating registration of pharmaceutical dosage forms in Saudi Arabia. Official decisions concerning registration and all manufacturing treaties. Registration of imported medications. Registration of control locally manufactured drugs. All requirements and documents for registration. Relationship between the responsible administrations in the FDA of Saudi Arabia.

Research Project: The Research Project course (PHT 646) offers students a practical, hands-on opportunity to apply the knowledge gained from previous coursework in industrial pharmacy. Under the supervision of a major advisor and a Research Project Committee, consisting of at least two additional faculty members, 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.

6. Research Project Requirements

The Research Project course offers students a practical, hands-on opportunity to apply the knowledge gained from previous coursework in industrial pharmacy. Under the supervision of a major advisor and a Research Project Committee, consisting of at least two additional faculty members, 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.

- Students must complete an original research project under faculty supervision.
- The research topic must align with industrial pharmacy and the university's research directions.

7. Research Areas

- Advanced drug delivery systems.
- Pharmaceutical manufacturing innovations.
- Nanotechnology in pharmaceutics.
- Automation and machine learning in quality control.
- Sustainability in pharmaceutical production.

8. Assessment and Grading System

Student performance in the Master of Industrial Pharmacy programme is evaluated using a variety of assessment methods designed to measure knowledge, practical skills, critical thinking, and research capabilities.

Assessment Methods

- **Written Exams and Tests:** These include multiple-choice, short-answer, and case-based questions used to evaluate understanding of theoretical content. Exams are typically administered mid-semester and at the end of each course.
- **Practical Examinations:** Conducted in laboratory sessions to assess students' ability to apply concepts in experimental and pharmaceutical settings. This may include handling equipment, performing procedures, and interpreting results.
- **Research Projects:** Students are expected to complete an independent research project, often in the final year. This includes writing a dissertation and presenting findings to a panel of academic staff.
- **Presentations and Seminars:** Students give oral presentations on selected topics or research work. This evaluates communication skills, subject knowledge, and ability to engage in academic discussion.
- **Assignments and Reports:** Regular written assignments test the ability to integrate scientific knowledge and provide structured analysis of pharmaceutical issues.

Grading System

Table 5. Grading System for Graduate Programs

Grade	Grade Point (Out of 5.0)	Letter Grade	Percentage Score
High Excellent	4.75 - 5.00	A+	95 - 100
Excellent	4.50 - < 4.75	A	90 - < 95
High Very Good	4.00 - < 4.50	B+	85 - < 90
Very Good	3.50 - < 4.00	B	80 - < 85
High Good	3.00 - < 3.50	C+	75 - < 80
Fail	< 3.00	F	< 75

9. Academic Policies and Procedures

Attendance Requirement

Regular attendance is a fundamental requirement for academic success in the Master of Industrial Pharmacy programme. Students are expected to attend all scheduled lectures, laboratory sessions, seminars, and assessments. Consistent participation ensures that students meet course learning outcomes and comply with university regulations. Excessive absences may result in academic penalties or disqualification from assessments, in accordance with university policy.

For detailed information on the attendance policy, please refer to the university's academic regulations: https://dar.psau.edu.sa/ar/content/2023-05-22

Code of Conduct

All students enrolled in the Master of Industrial Pharmacy programme at Prince Sattam bin Abdulaziz University are expected to uphold the highest standards of academic integrity, professionalism, and respectful behaviour. The University's Code of Conduct outlines the principles and expectations related to student behaviour, academic honesty, use of university resources, and interaction with faculty, staff, and peers. Adherence to these standards is essential for maintaining a safe, inclusive, and productive academic environment.

For the full details, please refer to the official University Code of Conduct available at:

https://edu.psau.edu.sa/en/node/9587

10. Learning Resources and Key Facilities

Learning Resources: The College is committed to providing high-quality, accessible learning resources to support student success. These include:

- **Library and Digital Resources**: Students have access to a wide range of physical and electronic resources through the university library, including textbooks, scientific references, peer-reviewed journals, and periodicals. The university maintains subscriptions to major academic publishers and databases, including the Saudi Digital Library (SDL), ensuring access to international references that may not be available locally. In coordination with faculty, the library ensures that required course materials are readily available.
- **Course Platforms and Supplementary Materials**: Course content, recorded lectures, assignments, and assessments are accessible through the Blackboard Learning Management System. Additional materials such as professional guidelines, regulations, and specialized educational software may also be provided to support academic and professional development.
- **Resource Requests**: In the event that a specific reference or period is not found, the student has the right to request from the faculty member or from the department head to request this reference in particular to be provided to the student in the fastest and easiest way.

Facilities: The College offers well-equipped facilities to support teaching, learning, and research, including:

- **Classrooms**: Lecture rooms are designed to support interactive and multimedia learning environments.
- **Pharmaceutics Laboratories**: The laboratories are equipped with specialized instruments and tools for pharmaceutical research, formulation, and analysis,

providing students with hands-on experience in experimental and applied pharmaceutics.

11. Career Opportunities

Graduates of the Master of Industrial Pharmacy programme at Prince Sattam bin Abdulaziz University are equipped with advanced scientific knowledge and practical skills that open diverse career paths across the pharmaceutical industry, regulatory agencies, and academic institutions. Graduates of the programme are qualified to work in a variety of sectors, including:

- **Pharmaceutical and Biotechnology Industries:** Including companies involved in the development and production of biopharmaceuticals, gene therapies, and biosimilars.
- **Regulatory and Governmental Agencies:** Such as the SFDA and MoH, where graduates contribute to drug safety, policy, and regulation enforcement.
- **Academic and Research Institutions:** Opportunities include teaching, research, and academic consulting roles in higher education and research centres.
- **Pharmaceutical Start-ups and Technology Ventures:** Involvement in innovative companies focusing on advanced drug development, formulation technologies, and pharmaceutical entrepreneurship.

12. Academic Advising and Support

Orientation and Onboarding: To ensure a smooth transition into graduate study, new students participate in a structured orientation programme that includes:

1. Program-Specific Orientation: Introduces students to the curriculum, academic policies, and expectations, ensuring they are well-prepared for the programme.
2. Introduction to University Resources: Familiarizes students with the university's resources, such as libraries, laboratories, and e-learning platforms like Blackboard.
3. Research and Laboratory Overview: Provides an introduction to research methodologies and lab facilities, preparing students for hands-on work in industrial pharmacy.

4. Community Building and Networking: Encourages interaction with faculty, senior students, and industry professionals to help students build valuable networks for their academic and professional growth.

Academic Advising and Mentorship: Each student is assigned a faculty member as an academic advisor to support their academic and professional development. The advising framework includes:

- Individual Academic Guidance: Advisors assist with course planning, research direction, and academic progress.
- Scheduled Office Hours: Faculty maintain regular office hours for advising and course-related support.
- Graduate Coordinator Oversight: The program's graduate coordinator facilitates coordination between students and their assigned advisors to ensure continuous academic support.

Personal Support:

- The university provides psychological and social support through specialized units. When necessary, students are referred to external health and rehabilitation services.
- Through the University's Special Needs Unit, disabled students are supported with appropriate corridors:
    - https://dsa.psau.edu.sa/ar/content/2022-06-27
    - https://dsa.psau.edu.sa/sitesuploads/dsa/rules/2021-08/book%20%281%29.pdf

13. Academic Calendar

The academic year is structured into two main semesters. Each semester includes a teaching period, followed by an examination period. Key academic activities and university holidays are listed below for the academic year 2025/26. Students are expected to be aware of all deadlines and plan accordingly.

Table 6. Academic Calendar for the Academic Year 2025/26

Semester	Description	Day	Hijri Date	Gregorian Date
First	Start of Term	Sunday	01 / 03 / 1447	24 /08 / 2025
	National Day Holiday	Tuesday	01 / 04 / 1447	23 /09 / 2025
	Fall Break	Starts: End of Day (Thursday)	29 / 05 / 1447	20 /11 / 2025
		Ends: Saturday	08 / 06 / 1447	29 /11 / 2025
	Final Exams	Starts: Sunday	01 / 07 / 1447	21 /12 / 2025
		Ends: End of Day (Thursday)	19 / 07 / 1447	08 /01 / 2026
	Mid-Year Break	Starts: End of Day (Thursday)	19 / 07 / 1447	08 /01 / 2026
		Ends: Saturday	28 / 07 / 1447	17 /01 / 2026
Second	Start of Term	Sunday	29 / 07 / 1447	18 /01 / 2026
	Founding Day Holiday	Sunday	05 / 09 / 1447	22 /02 / 2026
	Eid Al-Fitr Holiday	Starts: End of Day (Thursday)	16 / 09 / 1447	05 /03 / 2026
		Ends: Saturday	09 / 10 / 1447	28 /03 / 2026
	Eid Al-Adha Holiday	Starts: End of Day (Thursday)	04 / 12 / 1447	21 /05 / 2026
		Ends: Monday	15 / 12 / 1447	01 /06 / 2026
	Final Exams	Starts: Tuesday	16 / 12 / 1447	02 /06 / 2026
		Ends: End of Day (Thursday)	03 / 01 / 1448	18 /06 / 2026
	End of Year Break	End of Day (Thursday)	03 / 01 / 1448	18 /06 / 2026
Summer	Start of Term	Sunday	06 / 01 / 1448	21 /06 / 2026
	Final Exams	Tuesday	28 / 02 / 1448	11 /08 / 2026
	End of Summer Term	End of Day (Thursday)	30 / 02 / 1448	13 /08 / 2026
	Start of New Academic Year 2026/27	Sunday	10 / 03 / 1448	23 /08 / 2026

14. Contact Information

For further information, please contact:

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