



جامعة الإمام عبد الرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY

— كلية العلوم College of Science —

Doctor of Philosophy in Chemistry Program



Program Mission:

The mission of the program is to provide qualified PhD awarded chemists, fulfilling the need of society and excel in working professionally in all academic and research institutions, in order to achieve the kingdom's mission.

Program Goals:

- ❖ To prepare distinguished graduates with scientific, research and academic capabilities to achieve sustainable development.
- ❖ To form distinct and innovative research teams that will improve the competitiveness of research and promote the dissemination of scientific research.
- ❖ To enrich scientific and research institutions with qualified and creative cadres.
- ❖ To develop research laboratories with the latest techniques for conducting advanced scientific research.

About The Program:

Doctor of Philosophy in Chemistry Program is designed to develop advanced research skills and deep scientific knowledge, enabling students to address complex chemical challenges. Through rigorous coursework and independent research, candidates gain expertise in specialized areas of chemistry, preparing them for leadership roles in academia, industry, and innovation-driven fields.

Collage: Collage of Science, Dammam

Campus: Dammam- AlRayyan

Department: Chemistry Department

Studying Level: Postgraduate (Doctor of Philosophy Degree)

Gender: Female and male

Program Duration: Three Years

Type of Program: Financial Fee

Program media of instruction: English

Credit hours: 39 hour (30 hour courses + 9 hours Thesis)

Additional requirements: Thesis

Program System: Courses and Thesis

Type of Program: Paid

Program media of instruction: English

Program Timing: The program is offered during the evening hours

Tracks:

- ❖ Organic Chemistry
- ❖ Physical Chemistry
- ❖ Inorganic Chemistry
- ❖ Analytical Chemistry

Curriculum:

1. Study Plan:

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Course	Required	3	9	23.1 %
	Elective	6	18	46.1 %
Graduation Project (if any)	-	-	-	-
Thesis (if any)	Required	1	9	23.1 %
Field Experience (if any)	-	-	-	-
Others (seminar)	Required	1	3	7.8 %
Total		11	39	100%

2. Program Courses:

*Compulsory Courses

Level	Course Code	Course Title	Required or Elective	Pre- Requisite Courses	Credit Hours
Level 1	CHEM 660	Environmental Analysis	Required	-	3
	MATH 600	Polymer Characterization and Properties	Required	-	3
	CHEM 6XX	Elective Course (3 Courses)	Electives	-	9
Level 2	CHEM 640	Nanomaterials and applications	Required	-	3

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
	CHEM 6XX	Elective Course (3 Courses)	Electives	-	9
Level 3	CHEM 695	Seminar (1)	Required	-	1
Level 4	CHEM 696	Seminar (2)	Required	-	1
Level 5	CHEM 697	Seminar (3)	Required	-	1
Level 3 to 6	CHEM 699	Thesis	Required	-	9

*Elective Courses

Organic Chemistry Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
Level 1 & 2	CHEM 601	Advanced Heterocyclic Chemistry II	Elective	-	3
	CHEM 602	Advanced reaction Mechanisms	Elective	-	3
	CHEM 603	An introduction to Medicinal organic chemistry	Elective	-	3
	CHEM 604	Nanotechnology for organic synthesis	Elective	-	3
	CHEM 605	Polynuclear Heterocyclic Chemistry	Elective	-	3

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
	CHEM 606	Green Organic Chemistry	Elective	-	3
	CHEM 607	Selected Topics in Organic Chemistry 1	Elective	-	3
	CHEM 608	Selected Topics in Organic Chemistry 2	Elective	-	3
	CHEM 619	Various topics in Organic Chemistry	Elective	-	3

Physical Chemistry Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
Level 1 & 2	CHEM 620	Electrically Conducting Polymers	Elective	-	3
	CHEM 621	Advanced Molecular Spectroscopy	Elective	-	3
	CHEM 622	Green Chemistry and Catalysis	Elective	-	3
	CHEM 623	Computational Chemistry	Elective	-	3
	CHEM 624	Biophysical Chemistry	Elective	-	3
	CHEM 625	Selected Topics in physical Chemistry 1	Elective	-	3

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
	CHEM 626	Selected Topics in Physical Chemistry 2	Elective	-	3

Inorganic Chemistry Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
Level 1 & 2	CHEM 641	Bioinorganic Chemistry	Elective	-	3
	CHEM 642	Introduction to Industrial Chemistry	Elective	-	3
	CHEM 643	Thermal Analysis of Inorganic Materials	Elective	-	3
	CHEM 644	The Rietveld Method and X-Ray Powder Diffraction	Elective	-	3
	CHEM 645	Metal complexes: medicine & materials	Elective	-	3
	CHEM 646	Phase Transformations and Kinetics	Elective	-	3
	CHEM 647	Photo and Electro Catalysis	Elective	-	3
	CHEM 648	Selected Topics in Inorganic Chemistry 1	Elective	-	3

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
	CHEM 649	Selected Topics in Inorganic Chemistry 2	Elective	-	3

Analytical Chemistry Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours
Level 1 & 2	CHEM 661	Green analytical chemistry	Elective	-	3
	CHEM 662	Advanced bioanalytical chemistry	Elective	-	3
	CHEM 663	Modern chemical analysis	Elective	-	3
	CHEM 664	Sensors in Analytical Chemistry	Elective	-	3
	CHEM 665	Comprehensive chemometrics	Elective	-	3
	CHEM 666	Selected Topics in Analytical Chemistry 1	Elective	-	3
	CHEM 667	Selected Topics in Analytical Chemistry 2	Elective	-	3

Career paths/Jobs students are qualified for:

- ❖ Water quality specialist
- ❖ Environmental protection specialist
- ❖ Academic researcher
- ❖ Laboratory scientist
- ❖ Specialist in material modelling and data
- ❖ General and higher education
- ❖ Research assistant in research centres.
- ❖ Education Scoter

Admission Requirements:

- ❖ **Master's Degree:** Applicants must hold a Master of Science (M.Sc.) degree in Chemistry in the same specialization they intend to pursue in the Ph.D. program, from a college of science recognized by the Ministry of Education, with a cumulative GPA of no less than 3.5.
- ❖ **English Proficiency:** Applicants must obtain a minimum score of 6 in the academic IELTS test or its equivalent.
- ❖ **Letters of Recommendation:** At least two academic recommendation letters must be submitted. It is preferred that one letter be from the applicant's master's thesis supervisor, attesting to the applicant's commitment to research ethics, integrity, and responsibility for learning.

- ❖ **Entrance Exam and Interview:** Applicants must pass the entrance exam and the personal interview.
- ❖ **Application Fee:** Applicants must pay a non-refundable application fee.
- ❖ **Tuition Fees:** Applicants must pay the required tuition fees.

Target Groups for Admission to the Ph.D. Program in Chemistry:

- ❖ Individuals who hold a master's degree in chemistry.
- ❖ Employees in education, industry, or governmental sectors seeking advanced qualifications in chemistry.
- ❖ Individuals aiming to develop their research skills and pursue a career in scientific research.
- ❖ Candidates interested in working in higher education and teaching.
- ❖ Individuals passionate about expanding their knowledge and expertise in advanced chemistry topics.

Graduation Requirements:

- ❖ **Completion of Required Courses:** All required courses must be completed according to the approved study plan.
- ❖ **Comprehensive Exam:** Passing the comprehensive exam with a minimum score of 75% in both the oral and written components, separately.
- ❖ **Cumulative GPA:** A minimum cumulative GPA of 3.75 out of 5.00 must be achieved.

- ❖ **Thesis Defence:** The thesis must be successfully defended.
- ❖ **Duration of Study:** Adherence to the maximum allowable study duration is required. The Ph.D. degree must be completed in no less than six semesters (three years) and no more than ten semesters (five years). If the student does not complete the program within this period, the main supervisor must request an extension with the approval of the department council, the college, and the Deanship of Graduate Studies.
- ❖ **Publication Requirement:** The student must publish at least one scientific paper in a peer-reviewed journal, or provide proof of its acceptance, or confirmation that it is under review.
- ❖ **Additional requirements:** Fulfilment of any other requirements approved by the university or the department.

What Distinguishes Our Program:

- ❖ **Flexible Schedule:** The program is designed to meet the needs of professionals, offering flexible schedules that support work-life balance.
- ❖ **Excellence in Scientific Research:** The program focuses on advanced research aligned with national and global priorities in chemistry, fostering innovation and scientific discovery.
- ❖ **Comprehensive Academic Framework:** The program combines specialized coursework with an intensive research component (the thesis), providing a strong foundation for acquiring expertise and excellence in chemistry.
- ❖ **Advanced Research Facilities:** The program provides access to modern laboratories and equipment that support high-quality research.

- ❖ **Interdisciplinary Focus:** The program encourages collaboration across various chemistry disciplines to tackle complex scientific challenges.
- ❖ **Career Development Opportunities:** The program equips graduates with advanced skills that qualify them for leadership roles in academia, industry, and research institutions.
- ❖ **Support for Scientific Publishing:** The program promotes scholarly engagement by supporting students in publishing their research in high-impact journals and presenting at national and international conferences.

Contact Information:

Email: csd.gsc@iau.edu.sa

Phone: +966133337431

Website: Department of Chemistry – College of Science – Dammam

Address: 7667 Prince Nayef Bin Abdulaziz Road, Al Rayyan, Dammam 32256