Kingdom of Saudi Arabia
Ministry of Education
University of Bisha

المملكة العربية السعودية
وزارة التعليم
جامعة بيشة

جامعة بيشة
UNIVERSITY of BISHA

Bachelor of Science in Chemistry
Program

Operational Plan

(2023**-202**4**)**

University of Bisha

Faculty of Science

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1. Overview

As a result of the major developments and challenges facing higher education in the Kingdom of Saudi Arabia and the strong competition between relevant educational institutions at the national, regional and international levels, the Department of Chemistry at the University of Bisha was keen to play its pivotal role and fulfill its commitment to providing high quality in the Chemistry program. The program was created to meet the needs of the labor market in the region.

This operational plan was derived from the vision and mission of the college, which aims to provide distinguished educational programs to graduate cadres that keep pace with scientific development and the needs of the labor market, and to produce innovative scientific research and effective community partnership. To achieve the program's vision and mission, the operational plan provided a general description of priority objectives in the form of practical and measurable initiatives.

2. College's mission statement

Providing distinguished educational programs to graduate cadres who keep pace with the scientific development and the need for the labor market, and to produce innovative scientific research and an effective community partnership.

3. College's objectives

1. Meet the needs of society for qualified cadres in the fields of basic sciences and their applications.

2. Developing educational programs in line with the standards of quality and academic accreditation.

3. Offer postgraduate programs.

4. Providing an effective research environment to enhance research production and innovation.

5. Development of the college's own resources.

6. Establishing effective community partnerships.

7. Providing a stimulating work environment for college employees.

4.Program Mission:

An educational system in chemistry that enhances student skills and contributes to the development of society and adds value to scientific research.

The Program mission can be simplified as:

1. **PM1.** Provide high-quality education in chemistry in order to prepare young scientists.
2. **PM2.** Strong analytical, experimental, self-learning and communication skills.
3. **PM3.** Meet the needs of the labor market.
4. **PM4.** Serve society.

5.Program Goals:

1. Prepare graduates capable of pursuing graduate studies in chemistry.

2. Prepare graduates for a successful career in industry or research labs.

3. Prepare graduates with communication skills and teamwork and self-learning values that enable them to work in various environments.

6.Program operational goals

1. **POG1** Prepare graduates with a combination of scientific knowledge, practical skills, and innovation.

2. **POG2** Promote the program to get national and international accrediting.

3. **POG3** Enhance the quality and quantity of chemical research.

4. **POG4** Enhance community participation and engagement.

Alignment between program operational goals and program mission

		Program Mission			
		PM1	PM2	PM3	PM4
Program operational goals	POG1	√			
	POG2		√		
	POG3			√	
	POG4				√

7.Operational plan

Objectives	POG1: Prepare graduates with a combination of scientific knowledge, practical skills, and innovation.						
Projects/ Initiative	Action	Time	Requirements Resource / Support	Primary Responsible	Follow up Responsibility	KPI	
Using Technology in Education: Integrate digital learning tools, such as virtual simulations and Blackboard, to provide an interactive educational experience.	Deploying course materials on the Blackboard platform. Purchasing the necessary licenses and installing chemical experiment simulation software. Creating interactive educational content compatible with digital tools.	One academic year	Obtaining the necessary licenses for simulation software. Training faculty on the use of the Blackboard platform and simulation tools. Technical support for the technological infrastructure. A budget allocated for providing the software. The university's technical support team.	Supervisor of E-learning in the department.	Programs Coordinator	The percentage of courses activated on the Blackboard platform. The percentage of faculty and students who have completed training on simulation tools.	

Enhance Infrastructure and Educational Resources: Invest in laboratories, equipment, and modern technological resources to support learning and research.	Regular maintenance of laboratories and classrooms. Assessing the current needs of the laboratories. Purchasing and installing the required devices and tools.	One academic year	Submitting maintenance and educational needs requests. Availability of technical support for installation and maintenance. A budget allocated by the university. Continuous technical support.	Laboratory and Equipment Manager.	Program Coordinator.	The percentage of laboratories that have been maintained. Training faculty on different laboratories. The percentage of devices and educational needs that have been provided. .
Advanced Academic Advising Program: Develop a mentoring program focused on personal and professional guidance, offered by specialized professors and professionals in the field of chemistry.	Designing guidance policies for the program. Distributing students to academic advisors. Ensuring continuous guidance for students Conducting regular counseling sessions. Collecting feedback to improve the program.	One academic year	Training for mentors. Collaboration platform for communication.	Academic Guidance Supervisor	Program Coordinator	(a) Number of counseling sessions. (b) Satisfaction rates of participants.

Activating extracurricular activities: (scientific, athletic, and cultural) to enhance interactive learning and collaboration among students.	Organizing sports courses such as football, tennis. Holding poetry and cultural competitions, and literary evenings. Conducting scientific competitions, research exhibitions. Organizing chemistry Day. Offering training courses in various skills such as time management, exam preparation, using laboratory equipment, safety and security in labs, ethics in scientific research.	One academic year	Materials and tools for cultural and scientific activities. Qualified trainers and supervisors. Arranging places and halls.	Extracurricular Activities Supervisor	Programs Coordinator	Number of activities implemented. Student participation rate. Student feedback.
Academic Exchange Programs and Scientific Visits: Expand student exchange programs and organize scientific visits to research institutions and global universities.	Develop partnerships and draft agreements.	One academic year	Funding for travel and accommodation. university partnership agreements. staff for coordination.	Extracurricular Activities Supervisor	Programs Coordinator	Number of exchange students and scientific visits.

Scientific Presentation Competitions: Organize competitions for presenting student research projects or scientific experiments to stimulate innovation and scientific communication.	Plan event and set up competition criteria.	One academic year	Venue for competition judges awards and recognition for participants promotional materials.	Chairman of the Postgraduate Studies and Scientific Research Committee	Department Chair	Number of participants projects presented.
Workshops and Seminars: Organize interactive workshops and seminars with experts in the field of chemistry to expand theoretical knowledge and gain new insights.	Coordinate workshops and invite experts.	One academic year	Workshop materials promotional materials	Chairman of the Postgraduate Studies and Scientific Research Committee	Department Chair	Number of workshops and attendee feedback.

Objectives	POG2: Promote the program to get national and international accrediting						
Projects/ Initiative	Action	Time	Requirements Resource / Support	Primary Responsible	Follow up Responsibility	KPI	
Design and Implement an Effective Quality Assurance System Using a Systematic Approach: Develop and implement a quality assurance system that adheres to national and international standards and includes mechanisms for regular monitoring and evaluation to ensure the achievement of academic and educational objectives.	Develop a quality assurance manual specific to the program, outlining standards and procedures to be followed. Establish and document all program-specific policies for effective and consistent implementation. Design and develop software tools to assist in measurement, analysis, and reporting to support quality monitoring and evaluation processes.	One academic year	A specialized team for the development of the manual and policies. Programmers and analysts for the design of the software tools. Technological tools and resources for the development and support of the software.	Program coordinator.	Department Chair	The quality and comprehensiveness of the manual and policies. The effectiveness and user-friendliness of the software tools.	

Conduct Continuous Internal and External Evaluations: Implement regular evaluations to review and improve the program's quality in accordance with national and international standards.	Data collection (various questionnaires - course reports, program report - measuring program learning outcomes - measuring program performance indicators - measuring the percentage of completion of the program's operational plan - measuring program performance standards) Analysis of the results Reports preparation Develop action plans to address any identified weaknesses.	One academic year	Need for a qualified evaluation team assessment tools access to program data	Program coordinator.	Department Chair.	Completion rate of course files Measurement of program learning outcomes with result analysis Measurement of program performance indicators with result analysis Measurement of program performance standards Improvement rate based on action plans

Curriculum Development: The curricula are developed to integrate theory and application, focusing on solving practical problems and valuing self-learning and teamwork.	Review and update existing course syllabi to enhance the integration of theory and application.	One academic year	academic committee for curriculum development. Survey the opinions of students, professors, employers, and the advisory committee.	Program coordinator.	Department Chair.	Percentage of courses updated. Student satisfaction rates with curriculum changes.

Obtaining Full Accreditation for the Program and Meeting Quality Assurance Requirements: Work strategically to meet all the necessary requirements for full accreditation, including improving infrastructure, developing academic resources, and ensuring excellence in scientific research and teaching.	Perform a gap analysis to pinpoint areas requiring enhancement for accreditation. Upgrade laboratories and facilities to comply with accreditation criteria. Establish and maintain a continuous improvement protocol. Finalize the program's self-study report.	One academic year	Financial investment for laboratory and facility upgrades. Professional expertise for gap analysis and continuous improvement methodology. Administrative support for conducting the self-study.	Program coordinator.	Department Chair.	Degree of conformance to accreditation requirements identified in the gap analysis. Progression of laboratory and facility enhancements. Effectiveness of the continuous improvement process. Completion status of the program's self-study.

Objectives	POG3: Enhance the quality and quantity of chemical research					
Projects/ Initiative	Action	Time	Requirements Resource / Support	Primary Responsible	Follow up Responsibility	KPI
Orientation Program Enhancement: Maintain and enhance the orientation program regarding the college and university's bylaws, policies, and opportunities.	Provide an orientation program for department staff	One academic year	Orientation program package (presentations, brochures, handouts, public relations, …)	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Percentage of faculty who attend orientation sessions.
National Research Priorities: Address national research priorities through the department's research projects.	Encourage department and faculty members to conduct research in the priority areas by the formulation of research groups.	One academic year	Guidelines for the formulation and functioning of the research groups.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of published papers related to the National Research priorities

Research Publication Incentive: Encourage department staff to publish, especially in journals with high impact factors.	Formulate research groups Establish a yearly Dean's award for faculty who publish in high impact factor journal. Improve departmental research infrastructure	One academic year	The University annual award for searcher who publish in ISI journals	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Percentage of faculty published in journals with high an impact factor. Proportion of teaching staff members with at least one refereed publication during the previous academic year
Community-Oriented Research: Engage the department in research projects directed at community issues.	Provide an orientation on community based research. Formulate research groups that will undertake community research projects. Orientation about funding related to community projects.	One academic year	Orientation program on community based research. Guidelines for formulation and functioning of community based research groups. Orientation program related to funding for community projects.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of research projects directed to community.

Interdepartmental Collaborative Research: Support and foster collaborative research among the four departments within the Faculty of Sciences.	Identify common areas of research interests for collaborative research among the four department in the sciences faculty make the equipment of our department available to members of other departments of the faculty	One academic year	List of common areas of research interest. Orientation program regarding the common areas of interest among the faculty departments.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of collaborative research projects among the fourth departments
Joint Authorship Support: Support joint authorship between faculty members and external authors.	Identify common areas of research interests for collaborative research with external author's Facilitate the process of publication with external authors.	One academic year	List of common research interests between faculty and external authors. Agreement for joint publications with external authors.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of published papers co-authored by external researchers

Graduate Studies Development in chemistry: Work with the faculty and university to create graduate programs in chemistry at the department.	Propose a master program in chemistry. develop a program in relation with national priorities such as energy and environment.		Discuss the program in chemistry department council Propose a committee to prepare the master program with courses specifications	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Program readiness
Funding Resources Identification: Promote opportunities to identify and secure funding resources for faculty and students.	Identify funding sources. Disseminate information regarding sources of funds to faculty. Facilitate training on how to write a proposal to access funding.		List of funding sources. The training needs for access of funding. Other funding agencies.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of Research income from internal and external sources in the past year as a proportion on the number of full time teaching staff members.

Research Supportive Resources: Provide necessary resources to support research within the department.	Identify and orient faculty and staff on available resources. Facilitate the access to available resources.		Data bases and literature required are available in the library. Orientation package regarding available resources. List of available resources including software, data bases and laboratories.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Percentage of Utilization of research supportive resources. Percentage of faculty supported to present their work per year.
Student Research Projects: Encourage students to engage in research projects under faculty supervision to develop their research and analytical skills.	Assign an academic supervisor for each research project.	One academic year	allocation of budget for research materials and tools. access to electronic information and resources.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of research projects students are engaged in.

Organize Workshops on Research Writing and Presentation: Train researchers and students in skills for writing scientific research and presenting it effectively.	Conduct regular training sessions to enhance research writing and presentation skills.		Materials for workshops skilled trainers.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of workshops held participant feedback scores
Organize Scientific Seminars: organize seminars that bring together scientists and researchers to discuss recent developments in the field of chemistry.	Plan and execute periodic seminars.		budget for guests and marketing.	Head of the Graduate Studies and Scientific Research Committee.	Department Chair	Number of seminars organized; participant satisfaction;

Objectives	POG4: Enhance community participation and engagement.					
Projects/ Initiative	Action	Time	Requirements Resource / Support	Primary Responsible	Follow up Responsibility	KPI
Establish Partnerships with Local and International Academic Institutions: Sign cooperation agreements with local and global universities and research centres to exchange expertise and resources.	Student visits supervised by faculty members to universities or research centres and relevant industry entities. Organizing visits by faculty members to high schools to deliver public lectures in Chemistry.	One academic year	Providing financial support for the visits. Coordinating between the university's Public Relations and Media Management and the visiting entity.	Student Affairs Committee.	Department Chair	(a) Student and faculty satisfaction rate with the visit. (b) Number of students participating in the visit. (c) Number of chemistry lectures delivered.
Develop Alumni Networking Programs: Create a strong network of alumni working in various fields to exchange experiences and strengthen the relationship network.		One academic year	Compiling statistics on the alumni including the jobs they have secured, and their mobile numbers. Creating a WhatsApp group for the alumni. Organizing a meeting for the alumni on the day celebrating Chemistry Day.	Student Affairs Committee.	Department Chair	The percentage of alumni whose data have been updated in the database. The percentage of alumni who have joined the WhatsApp group. The percentage of alumni who attended the meeting.