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2020

Annual Program Report

Program Name:	**Bachelor of Chemistry**
Qualification Level:	**6th level**
Department:	**Chemistry**
College:	**Science**
Institution:	**Jouf University**
Academic Year:	1443
Main Location:	**Sakaka**
Branches offering the Program:	**Main Campus–Sakaka** **Female Campus–Sakaka**

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A. Implementation of Previous Action Plan

Considering the recommendations of previous year annual report, list the planned actions and their status.

Planned Actions	Responsibility of Action	Planned Completion Date	Level of Completion		If Not Completed	
			Completed	Not Completed	Reasons	Proposed Actions
1- Improving staff abilities in dealing with some QA documents (e.g. KPI, program and course reports, model exam, distribution exam questions on the ILOs.	Chair of QA Unit	April 30th, 2021	✓			
2- Asking for external and internal reviewers' assignment for the chemistry program report evaluation and assessment.	Head of department	April 30th, 2021	✓			
3- Looking for lake in staff members.	Head of department	April 30th, 2021	✓			
4- More facilities and technical support needed.	Department council	April 30th, 2021	✓			
5- Develop alumni unit to support them and follow up their activities.	Alumni committee	April 30th, 2021	✓			
6- Educating student about the importance of the Chemistry to the society and that it is the locomotive of progress. This is done through meeting and brochures	Student Affairs committee	April 30th, 2021	✓			

B. Program Statistics

1. Students Statistics (in the year concerned)

No.	Item	Results
1	Number of students who started the program	45
2	Number of students who graduated	36
3	Number of students who completed major tracks within the program (if applicable)	
	a.	NA
	b	NA
	c.	NA
4	a. Number of students who completed the program in the minimal time	27
5	a. Percentage of students who completed the program in the minimal time (Completion rate)	60%

6	Number of students who completed an intermediate award specified as an early exit point (if any)	NA
7	Percentage of students who completed an intermediate award specified as an early exit point (if any)	NA

Comment on any special or unusual factors that might have affected the completion rates:
None

2 . Cohort Analysis of Current Graduate Batch

Student Categories	Years	Total cohort enrollment	Withdrawn	Retained till year end	Not passed	Passed	Passing rate
2018-19	M	10	-	10	2	8	80%
	F	35	2	33	5	28	84.8%
	Total	45	2	43	7	36	83.7%
2019-20	M	8	-	8	2	6	75%
	F	28	-	28	5	23	82.1%
	Total	36	-	36	7	29	88.5%
2020-21	M	6	-	6	2	4	66.6%
	F	23	1	22	5	17	77.3%
	Total	29	1	28	7	21	75%
2021-22	M	14	5	9	3	6	66.67%
	F	27	1	26	5	21	80.76%
	Total	31	6	35	8	27	77.14%

Comments on the results:

Passing rate is decreasing since from the academic year 2020-21. Failing rate steady since the academic year 2018-19. while the Withdrawn rate decrease since the academic year 2019-20 and increase in the year 2021-22. Many actions have been taken over the past few years in order to increase the retention rate, and passing rate such as, tutorials sessions been arranged for the weak students. Academic advisors follow the weak students and arrange a meeting with them weekly. Cognitive skills of the students been polished by assigning a mini projects and group discussion tasks at the course level.

3.Analysis of Program Statistics

(Including strengths, areas for improvement, and priorities for improvement)

Strengths:

- Retained rate is good in the program.
- Passed rate increase in year 2021-22 compared to the year 2020-21.

Areas for Improvement:

- Increasing the passing rate across the years of the program.
- Decreasing in withdrawal rate across the years of the program.
- Decreasing in failing rate across the years of the program.
- The action plan for courses report should be analyzed to collect the student's feedback to improve the education Process.

Priorities for Improvement:
- Increasing the passing rate across the years of the program.

- Decreasing in withdrawal rate across the years of the program.
- Decreasing in failing rate across the years of the program.
- The action plan for courses report should be analyzed to collect the student's feedback to improve the education Process.

C. Program Learning Outcomes Assessment

1.Program Learning Outcomes Assessment Results.

(Direct assessment from Capstone Courses)

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results	
				Male	Female
Knowledge and understanding					
K1	Demonstrate the main concepts and chemical laws in all studiedchemistry branches	●Theory paper exams ●Quizzes	75%	77.19	83.38
K2	Outline the scientific principles inthe subfields of chemistry (analytical, inorganic, organic andphysical), and apply these principles to interact with industrial fields	●Class participation [Rubrics-based]	75%	54.84	67.70
K3	Discuss the major types of chemical reactions, their characteristics, and mechanisms as well as their kinetics	●Discussions [Rubrics-based]. ● Home work	75%	75.39	78.51
K4	Explain, integrate and apply the relevant knowledge and theories in basic sciences and other disciplines and professional fields	●Mid-term and final exams	75%	88.27	92.75
Skills					
S1	Classify the chemical compounds and identify their properties.	● Theory paper exams	75%	96.25	95.12
S2	Compare the results to predict and rationalize properties, mechanisms and patterns of reactivity.	● Class participation [Rubrics-based] ●Discussions [Rubrics-based]	75%	74.58	74.79
S3	Formulate processes, relationships and techniques related to different chemistry branches.	● Seminar evaluation [Rubrics-based]	75%	67.63	77.06
S4	Summarize information from library, online and literature resources that will support the solving of chemical	● Assignment ● Quizzes	75%	97.97	89.71

		● Practical Exams			
	problems	● Mid-term and final exams			
S5	Evaluate, develop and conduct Chemistry experiments or test hypotheses, analyze and interpret data and use scientific judgment to address conclusions and make a criticism		75%	96.67	82.58
Values					
V1	Conduct laboratory experiments safely, evaluate the potential impact of chemistry that may have on society, health and the environment.	●Seminar evaluation [Rubrics-based] ●Discussions [Rubrics-based] ● Practical tests ● Projects [Rubrics-based] ● Continuous evaluations ● Reports and surveys [Rubrics-based] ● Oral presentation [Rubrics-based]	80%	88.81	95
V2	Enhance students' self and long life-learning using information technology, risk management, organization of time, and reviewing of a quality control process.		80%	66.31	76.91
V3	Collaborate effectively as part of a team, recognizing and respecting the viewpoints of others and developing understanding and awareness of leadership styles and their impacts upon projects.		80%	95.72	92.05

(Indirect assessment from surveys)

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results		
				Employer Survey	Students Evaluation of program	Alumni Survey
Knowledge and understanding						
K1	Demonstrate the main concepts and chemical laws in all studiedchemistry branches	Indirect from Surveys	4/5	4.17	4.25	4.23
K2	Outline the scientific principles in the subfields of chemistry (analytical, inorganic, organic and physical), and apply these principles to interact with industrial fields			4.17	4.16	4.49
K3	Discuss the major types of chemical reactions, their characteristics, and mechanisms as well as their kinetics			4.17	4.21	4.36
K4	Explain, integrate and apply the relevant knowledge and theories in basic sciences and other disciplines and professional fields			4.44	4.25	4.10
Skills						
S1	Classify the chemical compounds and identify their properties.	Indirect from Surveys	4/5	3.89	4.07	4.10

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results		
				Employer Survey	Students Evaluation of program	Alumni Survey
S2	Compare the results to predict and rationalize properties, mechanisms and patterns of reactivity.			4.17	3.83	3.72
S3	Formulate processes, relationships and techniques related to different chemistry branches.			4.17	3.88	3.85
S4	Summarize information from library, online and literature resources that will support the solving of chemical and research problems.			4.44	4.21	3.85
S5	Evaluate, develop and conduct Chemistry experiments or test hypotheses, analyze and interpret data and use scientific judgment to address conclusions and make a criticism.			4.17	4.25	4.23
Values						
V1	Conduct laboratory experiments safely, evaluate the potential impact of chemistry that may haveon society, health and the environment.	Indirect from Surveys	4/5	4.44	3.41	4.49
V2	Enhance students' self and longlife-learning using information technology, risk management, organization of time, and reviewing of a quality control processes.			4.17	3.88	4.49

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results		
				Employer Survey	Students Evaluation of program	Alumni Survey
V3	Work effectively as part of a team,recognizing and respecting the viewpoints of others and developing understanding and awareness of leadership styles and their impacts upon projects.			4.17	3.83	4.10

Comments on the Program Learning Outcome Assessment results.

- Performance indicators female for the PLO-1 while Performance indicators male for PLO-7 needs more improvement.
- Performance indicators male and female for the PLO-2, PLO-6, and PLO-11 needs more improvement.
- Improvement needs for work in team skills, applying the principles of chemistry to interact with industrial fields as per the results of the Alumina's survey.
- The PLOs5 showed less satisfaction in employer's survey and need improvement.
- The PLOs6 showed less satisfaction in student program evaluation survey and alumina survey need improvement.
- The PLOs7 showed less satisfaction in student program evaluation survey and alumina survey need improvement.
- The PLOs8 showed less satisfaction in alumni survey need improvement.
- The PLOs10 showed less satisfaction in student evaluation program survey need improvement.
- The PLOs11 showed less satisfaction in student evaluation program survey need improvement.
- The PLOs12 showed less satisfaction in student evaluation program survey need improvement.

1. Analysis of Program Learning Outcomes Assessment
(Including strengths, Areas for Improvement, and priorities for improvement)

Strengths:
- Six PLOs out of 12 showed achievement equal to or above the target level
- All PLOs are assessed during his year
- Some of the PLOs showed high employer, students' evaluation of program and graduate satisfaction which exceeded the level of 4 out of 5 points survey.
- employers survey expressed higher level of satisfaction than Students' evaluation of program and graduates about most of PLOs which also showed higher satisfaction more than the last year.

Areas for Improvement:

- Improving of PLOs 1 for female; Demonstrate the main concepts and chemical laws in all studiedchemistry branches with update of the contents, teaching/learning strategies and assessment methods with update of the used checklists for evaluation.
- Improving of PLOs-2   for male and female; Outline the scientific principles in the subfields of chemistry (analytical, inorganic, organic and physical), and apply these principles to interact with industrial fields with update of the contents, teaching/learning strategies and assessment methods with update of the used checklists for evaluation.
- work in team, applying the principles of chemistry to interact with industrial fields skills needs improvement as per the results of the Alumina's survey.
- Encourage more students to share in extracurricular activities through students' club activities and community involvement to improve their teamwork abilities.

Priorities for Improvement:

- Improving of PLOs 1 for female; Demonstrate the main concepts and chemical laws in all studiedchemistry branches with update of the contents, teaching/learning strategies and assessment methods with update of the used checklists for evaluation.
- Improving of PLOs-2   for male and female; Outline the scientific principles in the subfields of chemistry (analytical, inorganic, organic and physical), and apply these principles to interact with industrial fields with update of the contents, teaching/learning strategies and assessment methods with update of the used checklists for evaluation.
- work in team, applying the principles of chemistry to interact with industrial fields skills needs improvement as per the results of the Alumina's survey.
- Encourage more students to share in extracurricular activities through students' club activities and community involvement to improve their teamwork abilities

D. Summary of Course Reports

1. Teaching of Planned Courses / Units

List the courses / units that were planned and not taught during the academic year, indicating the reasons and compensating actions.

Course	Units/Topics	Reasons	Compensating Actions
All the courses were taught during the academic year 2021-22			

2. Courses with Variations

List courses with marked variations in results that are stated in the course reports, including: (completion rate, grade distribution, student results, etc.), and giving reasons for these variations and actions taken for improvement.

Course Name &Code	variation	Reasons for variation	Actions taken
Principals of organic Chemistry 1 CHM 241	Most of the student has grad D^+, D and Faild	Some students have lack in the skills related to drawing, nomenclature of organic chemistry compounds	More task provided to student to raise their ability for drawing nomenclature of organic compounds

Volumetric and gravimetric analysis CHM251	Most of the student has grad D$^+$, D and Faild	Some of the students have lack skills related to general chemistry , law and principals of general chemistry.	More task provided to student to raise their ability for law in general chemistry and principals of general chemistry.
Instrumental analysis methods CHM351	Most of the student has grad D$^+$, D and Faild	Some students have lack skills related to different analysis method	More training provided to student to raise their ability to different analysis methods

3. Result Analysis of Course Reports
(Including strengths, Areas for Improvement: and priorities for improvement)

Strengths:

- 100% of courses prepared course reports.
- The resistance showed from some courses for timing and quality of course reports have decreased (But still there).
- CLOs assessment was done for all courses.
- Introductory and some other courses with high failure rate over the last years showed marked improvement in completion rate.
- Almost all course reports showed analysis/interpretation of data from student's results, survey and CLOs assessment with suggestions for improvement.
- Almost all course reports showed follow up of previous improvement plans from the previous year reports.
- Timing of submission of course reports has improved and all course reports were reviewed by assessment analysis and internal review committee.

Areas for Improvement:

- Courses which have high failure rate will be improvement according to suggested action plan in the course report.
- The course report must submit in time
- All course report which revised by the internal review committee indicate that the action plan for the previous year must done.

Priorities for Improvement:

- Courses which have high failure rate will be improvement according to suggested action plan in the course report.
- All course report which revised by the internal review committee indicate that the action plan for the previous year must done.

E. Program Activities

F. Student Counseling and Support

Activities Implemented	Brief Description[*]
Orientation of new students	During the orientation day of new students, first week of the academic year, 90% of the newly enrolled students attended.
Workshop for staff	During the first month of the academic year and held by head of counseling unit, 90% of staff members attended
Distribution of students to advisors	The students/staff ration is about 8-1 with maximum of 10 -1
Follow up of week students	Bi-month reports are requested for progress of week students

Comment on Student Counseling and Support [**]

- During the orientation day for new students, the head of student counseling unit gave presentation about counseling process including; concept of academic counseling, tasks of the academic advisors and how students can communicate with advisors.
- Distribution of new students to staff, the students to the academic advisor ratio was kept less than 10-1.
- Distribution of week or failed students to all staff members with special emphasis on communication with advisors and the importance of at least monthly meeting with students with follow up to monitor their progress and providing bi-annual report about individual each student.
- Full contact data for all advisors was given to student's groups and advisor as well.
- A workshop was held for the academic mentors to explain the importance of academic counseling /its objectives and how to open a file for each student.
- Staff satisfaction survey revealed good satisfaction with the process of counselling and expressed by average response of results were 4.3 on 5 points evaluation survey while final year students showed 4.4 on 5 points satisfaction.

2.Professional Development Activities for Faculty and Other Staff

Activities Implemented	Brief Description[*]
Building exams and electronic question banks in the Blackboard system	**Type:** Workshop It's hands-on training on Building exams and electronic question banks in the Blackboard system **Venue**: online **Duration:** 1 Day **Target Audience:** All Teaching Staff **Total Number of attendees:** 15 **Overall customer satisfaction:** Excellent (3.6/5)
Quality standards in designing electronic courses	**Type:** Workshop **Venue**: online **Duration:** 1 Day **Target Audience:** All Teaching Staff **Total Number of attendees:** 7 **Overall customer satisfaction:** Excellent (3.4/5)
Workshop on Eligibility requirement for Program Accreditation	**Type:** Workshop It's hands-on training on requirement for Program Accreditation **Venue**: College of Science **Duration:** 1 Day **Target Audience:** All Teaching Staff **Total Number of attendees:** 7 **Overall customer satisfaction:** Excellent (3.4/5)
Quality	About 11 workshops were conducted by the College Quality Assurance and Accreditation Committee to improve knowledge and skills of staff, leaders, quality coordinators and program coordinators about the following titles: 1. Course Specifications 2. Course Report 3. Rubrics 4. Course File 5. Measurement of PLO 6. Standards of performance 7- Academic KPIs 8- Writing PLOs and CLOs 9- Strategic planning 10- Program Learning outcomes assessment 11- APR
Foundations and principles of e-learning	**Type:** Workshop **Venue**: online **Duration:** 1 Day **Target Audience:** All Teaching Staff **Total Number of attendees:** 18 **Overall customer satisfaction:** Excellent (3.7/5)
Workshop on Motivation – Key to Academic	**Type:** Workshop It's hands-on training on requirement for Program

Success	Accreditation **Venue**: College of Science **Duration:** 1 Day **Target Audience:** All Teaching Staff **Total Number of attendees:** 12 **Overall customer satisfaction:** Excellent (4.5/5)
Illustrations using software Visio	**Type:** Workshop It's hands-on training on using software Visio **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 19 **Overall customer satisfaction:** Excellent (4.5/5)
Avoid refusing to publish and raise the efficiency of scientific research	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 22 **Overall customer satisfaction:** Excellent (3.8/5)
Scientific publishing in WOS and Scopus	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 19 **Overall customer satisfaction:** Excellent (3.9/5)
Distinguished Scientific Publication Strategies	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 17 **Overall customer satisfaction:** Excellent (3.7/5)
The nature of the researcher and scientific research and its ethics	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 20 **Overall customer satisfaction:** Excellent (3.9/5)
The art of formulating and preparing tests in university education	**Type:** Workshop It's hands-on training on the art of formulating andpreparing tests in university education **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 12 **Overall customer satisfaction:** Excellent (4.5/5)
Scientific Research Methodology	**Type:** Workshop It's hands-on training on scientific research methodology **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 8 **Overall customer satisfaction:** Excellent (**3.5/5**)

Building exams and electronic question banks in the Blackboard system	**Type:** Workshop It's hands-on training on building exams and electronic question banks in the Blackboard system **Venue**: online **Duration**: 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 15 **Overall customer satisfaction:** Excellent (**3.8/5**)
Statistical analysis using SPSS	**Type:** Workshop It's hands-on training on usingSPSS in statistical analysis **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 14 **Overall customer satisfaction:** Excellent (**3.6/5**)
Quality standards in designing electronic courses	**Type:** Workshop It's hands-on training on the quality standards indesigning electroniccourses **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 10 **Overall customer satisfaction:** Excellent (**3.5/5**)
Time and meeting management skills	**Type:** Workshop It's hands-on training on the time and meetingmanagement skills **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 13 **Overall customer satisfaction:** Excellent (**3.6/5**)
Academic KPIs	**Type:** Workshop It's hands-on training on the time and meetingmanagement skills **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 10 **Overall customer satisfaction:** Excellent (**3.6/5**)
Foundations and principles of e-learning	**Type:** Workshop It's hands-on training on the principles of e-learning **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 8 **Overall customer satisfaction:** Excellent (**3.5/5**)
Requirements and standards of the National Center for Academic Accreditation and Assessment for	**Type:** Workshop It's hands-on training on the principles of e-learning **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 7 **Overall customer satisfaction:** Excellent (**3.4/5**)

Postgraduate Studies			
Designing opinion polls and questionnaires electronically	**Type:** Workshop It's hands-on training on the designing opinion pollsand questionnaires electronically **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 17 **Overall customer satisfaction:** Excellent (**3.8/5**)		
Systematic Literature Reviews	**Type:** Workshop It's hands-on training on systematic literature reviews **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 18 **Overall customer satisfaction:** Excellent (**3.9/5**)		
Teaching in a creative way	**Type:** Workshop **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 26 **Overall customer satisfaction:** Excellent (**3.7/5**)		
Lightweight Materials	**Type:** Workshop **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 21 **Overall customer satisfaction:** Excellent (**3.5/5**)		
Ruthenium for chemical catalysis	**Type:** Workshop **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 21 **Overall customer satisfaction:** Excellent (**3.5/5**)		
Chemistry and cosmetics	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 28 **Overall customer satisfaction:** Excellent (**4.2/5**)		
electropolymerizing of unsymmetrical Schiff bases	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 23 **Overall customer satisfaction:** Excellent (**4.2/5**)		
The nanocomposites used to prevent the post-surgery infections	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 25 **Overall customer satisfaction:** Excellent (**4.1/5**)		

The chemistry of perfumes	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 27 **Overall customer satisfaction:** Excellent (**4.1/5**)
Role of pharmaceutical organic chemistry in drug design	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 25 **Overall customer satisfaction:** Excellent (**4.1/5**)
Evaluation of newly synthesized ligands and their metal complexes both in bulk andnano size as potent anticancer agents	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 25 **Overall customer satisfaction:** Excellent (**4.1/5**)
Medicinal plants: from traditional use tomodern drugs design	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 25 **Overall customer satisfaction:** Excellent (**4.1/5**)
Fuel cells and their applications	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 21 **Overall customer satisfaction:** Excellent (**3.5/5**)
Current applications of carbon nanotubes	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 25 **Overall customer satisfaction:** Excellent (**4.1/5**)
Green Chemistry and its applications	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 25 **Overall customer satisfaction:** Excellent (**4.1/5**)
Nuclear Resonance Spectrometer advanced magnetic To characterize organic compounds	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 21 **Overall customer satisfaction:** Excellent (**3.5/5**)

Plastic and its impact on the environment	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 23 **Overall customer satisfaction:** Excellent **(4.2/5)**
What did chemists find about Covid 19 so far	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 23 **Overall customer satisfaction:** Excellent **(4.2/5)**
Our life is Chemistry	**Type:** Lecture **Venue**: online **Duration:** 2h. **Target Audience:** All Teaching Staff **Total Number of attendees:** 21 **Overall customer satisfaction:** Excellent **(3.5/5)**

Comment on Professional Development Activities for Faculty and Other Staff [**]

- The Chemistry program for faculty of science for the academic year 2021-2022 was a university wide, multi-levels program.
- There was a very good attendance rate for most of the sessions.
- Most of sessions showed high satisfaction from participants with the program content, instructors, timing and other related items. The participants were extremely satisfied with hands on training and the workshop topics that were relevant to workplace-based needs of the faculty members. The average satisfaction was 4.2/5.

https://drive.google.com/file/d/13gtgEWlyCAe3qgJyZofpxgF4IX4IFpwy/view?usp=share_link

3. Research and Innovation

Activities Implemented	Brief Description[*]
Staff research Production; the research production showed improvement during the academic year 21-22 as follow	The Number of papers published in scientific journals classified in Scopus databases: **181**
	The Number of papers published in scientific conferences: **4**
	The Total number of citations from Scopus database: **5434**
	The Number of faculty members among the most cited, based on the WoS or Scopus databases: **1**
	The number of research published through international cooperation with the best (100) universities according to the classification of Shanghai, QS or THE according to the latest classification of universities and research centers: **10**
	The Number of scientific papers classified in WoS or Scopus databases or conferences published with graduate undergraduate students: **10**
	The Number of research projects funded from within the university: **12**
	The Number of research projects funded from outside the university: **1**
	The Number of awards received by faculty members in the field of scientific research: **14**
Workshop: Master Project discussion.	**Type:** Workshop Sustainable Synthesis of New Mono and Bis- benzimidazoles: Design of Efficient Ru-complexes Comprising Benzimidazoles for the Amidation of Aldehydes **Venue:** College of Science **Duration:** 1 Day **Date:** 09/2/2022 **Target Audience:** All Teaching Staff and students **Total Number of attendees:** 20
	Type: Workshop Synthesis and Characterization of some Alternative Petroleum Products using Renewable Sources **Venue:** College of Science **Duration:** 1 Day **Date:** 09/2/2022 **Target Audience:** All Teaching Staff and students **Total Number of attendees:** 19
	Type: Workshop Investigation of chemical composition and biological activity of Saudi Basil (Ocimum basilicum) extracts **Venue:** College of Science **Duration:** 1 Day **Date:** 10/2/2022 **Target Audience:** All Teaching Staff and students **Total Number of attendees:** 19
	Type: Workshop Design and green synthesis of some new heterocyclic compounds

Activities Implemented	Brief Description[*]
	and their application in biological activities **Venue:** College of Science **Duration:** 1 Day **Date:** 10/2/2022 **Target Audience:** All Teaching Staff and students **Total Number of attendees:** 19
	Type: Workshop Fabrication of high-performance electro spun nanofiber containing carbon nanotubes and its evaluation for environmental applications **Venue:** College of Science **Duration:** 1 Day **Date:**10/2/2022 **Target Audience:** All Teaching Staff and students Total Number of attendees: 18
	Type: Workshop Synthesis and Applications of DecoratedNanocomposite Chitosan for the Separation of Some Elements of Economic and Environmental Inters **Venue:** College of Science **Duration:** 1 Day **Date:**10/2/2022 **Target Audience:** All Teaching Staff and students Total Number of attendees: 20
	Type: Workshop Applications of Gas Chromatography–Mass Spectrometry for the Analysis of Some Organic Impurities in Hand Sanitizers **Venue:** College of Science **Duration:** 1 Day **Date:**10/2/2022 **Target Audience:** All Teaching Staff and students Total Number of attendees: 19
	Type: Workshop Chemical Characterization and Biological Activities of Some Aromatic Plants in Saudi Arabia **Venue:** College of Science **Duration:** 1 Day **Date:**10/2/2022 **Target Audience:** All Teaching Staff and students Total Number of attendees: 17

Comment on Research and Innovation [**]

- The Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program is 96%, this is good achievement if compared with the last year.
- Almost all workshops and training sessions related to researches showed high staff satisfaction with the program content, instructors, timing and other related items. The average satisfaction was 4.4/5.

1. Community Partnership

Activities Implemented	Brief Description[*]
15 workshops agreed and approved	A number of 15 workshops have been received and approved to be conducted for the community on internal/external- community level. Such topics include but not limited to: renewable energy & applications, on-campus tours for laboratories, chemistry in life, extraction of olive oil.
Arab Week of Chemistry	On 17-22 of October 2022a number of students and staff have taken part in this event in association with the school in Jouf region. The event involved splitting them into groups in which each group was assigned a supervisor and was allocated a specific school. Their task involved do some experiment and give lecture about the important of chemistry in life.
Fifteen Olive Festival	On12[th] of January 2022, the student of chemistry department shar in the twelfth olive festival via making some products depend up on olive oil like soap, shampoo, cream, the student shows their product for various types of the community regardless of their backgrounds and employment status, many students have shared in this festival which will undoubtedly benefit them in their studies and later on their career.
^{1}HNMR Spectroscopy workshop	On the 10th of Apriel 2022, a workshop titled '^{1}HNMR Spectroscopy workshop' took place in the central laboratory center building. That workshop targets various types of the community regardless of their backgrounds and employment status. Many students have attended this workshop which will undoubtedly benefit them in their studies and later on their career.
Comment on Community Partnership [**]	

- Many community service events were conducted with involvement of about 50% of faculty staff and administrative staff were involved in these events.
- Many students were involved in community services aiming at improving their teamwork, leadership and communication skills as well as ethics and professionalism.

2. Analysis of Program Activities
(Including strengths, Areas for Improvement: and priorities for improvement)

Strengths:

- Many of teaching staff, admin staff and students were involved in arrangement and provision of theses event.
- The program provided number of community contribution over the academic year 2020-21.
- Improvement of staff publication and citations.
- Some student involved in research.
- Chemistry program was University wide program, and showed good satisfaction from the attendees
- Active students' club with active membership from about 15% of students

Areas for Improvement:

- Increase community service events with involvement of faculty staff and administrative staff.
- Increase staff publication and citations.
- Increase involvement of student in research.

Priorities for Improvement:

- Increase community service events with involvement of faculty staff and administrative staff.
- Increase involvement of student in research.

G. Program Evaluation

1. Evaluation of Courses

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
CHM 101	Chemistry general 1			✓
CHM 202	Chemistry general 2		Peer-Review	✓
CHM 241	Principles of organic chemistry 1			✓
CHM 231	Chemical thermodynamic			✓
CHM 221	Chemistry of main groups elements			✓
CHM 242	Principles of Organic Chemistry 2			✓
CHM 222	Practical Inorganic Chemistry 1		Peer-Review	✓
CHM 251	Volumetric and gravimetric analysis			✓
CHM 232	Phase rule and solutions			✓
CHM243	Practical organic chemistry 1			✓
CHM233	Principles of quantum chemistry		Peer-Review	✓
CHM 321	Transition Elements and coordination Chemistry			✓
CHM 322	Inorganic Reaction mechanism			✓
CHM341	Heterocyclic chemistry	Yes		✓
CHM331	Electro chemistry			✓
CHM351	Instrumental analysis methods		Peer-Review	✓
CHM332	Practical physical chemistry 1			✓
CHM 333	Chemistry of solid state			✓
CHM 334	Chemical kinetics			✓
CHM 342	Biochemistry		Peer-Review	✓
CHM 352	Separation methods and chromatography			✓
CHM 343	Polymers and petrochemicals			✓
CHM 344	Organic reactions mechanism		Peer-Review	✓
CHM 421	Organometallic chemistry			✓
CHM431	Surface and catalysis chemistry		Peer-Review	✓
CHM 441	Practical organic chemistry 2			✓
CHM 451	Environmental chemistry			✓
CHM498	Field training		Peer-Review	✓
CHM 422	Lanthanides and actinides chemistry		Peer-Review	✓
CHM424	Spectroscopy of inorganic compounds			✓
CHM425	Practical inorganic chemistry 2		Peer-Review	✓
CHM434	Practical physical chemistry 2		Peer-Review	✓
CHM 442	Organic compounds spectroscopy			✓
CHM 499	Research project		Peer-Review	✓
CHM453	Medical and industrial analysis		Peer-Review	✓

Program Elective Courses (10) Hours

SN	Course Code	Course Name	Hours				Prior requirements	Level
			Theoretical	Practical	Training /Exercises	Accredited		
1.	CHM335	Corrosion	1	2	0	2	CHM 331	6
2.	CHM322	Inorganic reaction mechanism	2	0	0	2	CHM 321	
3.	CHM345	Physical organic chemistry	2	0	0	2	CHM 341	
4.	CHM346	Natural products	1	2	0	2	CHM 341	
5.	CHM482	Nano-chemistry and application	1	2	0	2	90 credit hours must be completed	7
6.	CHM486	Green chemistry	2	0	0	2	90 credit hours must be compl1eted	
7.	CHM423	Photochemistry	2	0	0	2	CHM 321	
8.	CHM452	Advance subjects in analytical chemistry	1	2	0	2	CHM 352	
9.	CHM433	Physical chemistry of polymers	1	2	0	2	CHM 343, CHM 334	
10.	CHM443	Advanced practical applications in organic chemistry	0	4	0	2	CHM 342	8
11.	CHM488	Renewable energy	2	0	0	2	90 credit hours must be completed	
12.	CHM435	Advanced quantum chemistry	2	0	0	2	CHM 431	
13.	CHM426	Advanced topics in inorganic chemistry	1	2	0	2	CHM 421	
14.	CHM427	Nuclear and radio chemistry	2	0	0	2	CHM 421	
15.	CHM489	Industrial chemistry	2	0	0	2	90 credit hours must be completed	

2. Students Evaluation of Program Quality

Evaluation Date: Final year students (Program Evaluation Survey) May-2022	Number of Participants:107
Students Feedback	**Program Response**
Strengths: • Good satisfaction with PLOs i.e., 4.30 • Good overall student satisfaction	Results of PLOs assessment integrated with other indirect and direct assessment of PLOs
Areas for Improvement: • Students feedback to be provided on the Blackboard and documented in the course file • Rubrics explain to the students before evaluating the assessment • During the tutorial classes session discuss the practical skills and how to improve them	The program will encourage the teaching staff of the courses concerned with these to give more attention on provide feedback, explanation of rubrics and practical skills.
Suggestions for improvement: Students need more training on practical t skills.	The program will organize seminars or workshop for training on practical skills.

Evaluation Date: Midpoint student experience survey SES May-2022	Number of Participants:88
Students Feedback	**Program Response**
Strengths: • Good overall Satisfaction i.e., 4.25 • All questions related to the "Learning and Teaching" showed good results. • Questions related to the "Advice and Support" showed good results.	
Areas for Improvement: • Extracurricular activities. • Use of digital Resources. **Suggestions for improvement:** • Improving the student's satisfaction with extracurricular activities. • Improving the student's satisfaction with the digital resources.	• More extracurricular activities will organize. • E- learning committee will arrange a session with the students to explain them how to use the digital resources.

3. Other Evaluations

(e.g., Evaluations by independent reviewer, program advisory committee, and stakeholders (e.g., faculty members, alumni, and employers)

Evaluation method: Staff Satisfaction Survey	**Date:** May-2022	**Number of Participants: 30**
Summary of Evaluator Review	**Program Response**	
Strengths: • Good overall Satisfaction i.e., 4.44 • All questions related to the "Learning and Teaching" showed good results. • All questions related to the "Program Management" showed good results.		
Points for Improvements: • Professional Development Programs. • Community Services. **Suggestions for improvement** • Arrange professional development workshops or training sessions for the faculty members. • Motivate the faculty members to be involved more in the community services.	• Community services committee will follow up with the participation of the faculty members in the community services activities. • Program Quality Assurance and Research Committee's will arrange some sessions for the faculty members.	

Evaluation method: Alumni Satisfaction survey	**Date:** May-2022	**Number of Participants:** 39
Summary of Evaluator Review	**Program Response**	
Strengths: • Good overall Satisfaction i.e., 4.13 • All questions related to the "Qualities and Abilities" showed good results. • All questions related to the "level of program preparation for the Program Learning Outcomes" showed good results.		
Points for Improvements: • Soft Skills • Teamwork **Suggestions for improvement** • Arrange training programs to polish the soft-skills. • Introduce teamwork-based assignments.	• Alumni Committee will arrange a workshop targeting the soft-kills. • Faculty members will be asked to prepare assignments that will target to improve the teamwork skills amongst students.	

Evaluation method: Employers Satisfaction survey	Date: May-2022	Number of Participants: 18
Summary of Evaluator Review	**Program Response**	

Summary of Evaluator Review	Program Response
Strengths: • Good overall Satisfaction i.e., 4.21 • Good satisfaction level with the skills using information technology and the latest modes of communication	
Points for Improvements: • Increase number of participants • Practical Knowledge • Research problems	• Alumni Committee will arrange a workshop targeting the practical skills. • Faculty members will arrange extra sessions and assign extra homework in order to improve the practical knowledge and solve complex research chemistry problems in core courses.
Suggestions for improvement • Increase the number of participants to have information from different sources. • Arrange extra sessions for the research chemistry problems analysis and practical skills/knowledge.	

4. Key Performance Indicators (KPIs)

List the results of the program key performance indicators (including the key performance indicators required by the National Center for Academic Accreditation and evaluation)

No	KPI	Key Performance Indicators	Target Benchmark	Actual Value	Internal Benchmark	Analysis	New Target Benchmark
1	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives.	77%	80%	76.3%	It is noted that the actual benchmark (80%) value is higher than the target benchmark (77%). And from the values of last two years, the new target benchmark will be 82%.	82%
2	KPI-P-02	Students' Evaluation of quality of learning experience in the program	4.1	4.31	4.3	The questionnaire results show that actual KPI is 4.31, which means that the grade of satisfaction is "very High". And from the values of last two years, the new target KPI will be (4.2) for the next academic year	4.2
3	KPI-P-03	Students' evaluation of the quality of the courses.	4.1	4.45	4.4	The questionnaire results show that actual KPI is 4.45, and achieved the target (4.1). And from the values of last two years, the new target KPI is proposed (4.2) for the next academic year	4.2

4	KPI-P-04	Completion rate.	40%	30.67%	37.5%	The actual value (30.67%) is lower than the target (40%). And from the values of last two years, the new target is set to 40%	40%
5	KPI-P-05	First-year students retention rate	80%	88.17%	80.52%	Actual value (88.17%) achieved the target (80%). And from the values of last two years, The new target is to 80%	80%
6	KPI-P-06	Students' performance inthe professional and/or national examinations.	50%	Waiting data	31.8%	Regarding the previous year, actual value (31.8%) is lower than the target (50%). And from the values of last two years, the new target is set to 50%	50%
7	KPI-P-07	Graduates' employability and enrolment in postgraduate programs.	60% 5%	35.5% 1.7%	56% 4.5%	The actual value (35.5% and 1.7%) is lower than the target	60% 5%

						(60% and 5%). And from the values of last two years, the new target is set to 60% and 5%	
8	KPI-P-08	Average number of students in the class.	11	10.4	13	Actual value (10.4) is less than target benchmark (11) And from the values of last two years, the new target is set to 11	11
9	KPI-P-09	Employers' evaluation of the program graduate's proficiency.	4.0	4.18	3.9	The actual benchmark (4.18) is less than the target benchmark (4.0) and the internal benchmark (3.9). And from the values of last two years, the new target is kept to 4.2	4.2
10	KPI-P-10	Students' satisfaction with theoffered	4.0	4.0	3.82	The actual benchmark value is 4.0 that is equal to the target benchmark (4.0) and higher than the internal benchmark	4.0

						(3.82). And from the values of last two years, the new target benchmark will be 4.0	
11	KPI-P-11	Ratio of students to teaching staff.	10:1	11.2:1	11: 1	Actual value (11:2). The target is (10:1) and the internal benchmark (11:1), and this reflects not good ratio. And from the values of last two years, the new target benchmark kept at 10:1	10:1
12	KPI-P-12	Percentage of teaching staff distribution.	Assist. P:40 % Assoc. P:40 % Prof.: 20%	Assist. P:49.1 % Assoc. P:36.22 % Prof.: 14.7 %	Assist. P:59.24 % Assoc. P:26.06 % Prof.: 14.7 %	For assistant professors, actual value (49.1%) is more than the target (40%). We decided to retain the target benchmark at 40%. For associate professors, actual value (36.22%) is less than the target (40 %).	Assist. P:40 % Assoc. P:40 % Prof.: 20%

						And from the values of last two years, It is decided to retain the target benchmark at 40 %.	
13	KPI-P-13	Proportion of teaching staff leaving the program.	0%	3.33%	0 %	Actual value of this KPI is 3.33%. The new target benchmark will be equal to 0%, reflecting the department's aims to improve the working environment and to consequently reduce the attrition rate even further. And from the values of last two years, it decided to retain the target benchmark at 0%.	0%
14	KPI-P-14	Percentage of publications of faculty members.	85%	100%	82 %	The actual benchmark (100%) is higher than target (85%). And	100%

						from the values of last two years, it has been decided to set the target benchmark to 100%	
15	KPI-P-15	Rate of published research perfaculty member.	3:1	3.2:1	2.53:1	The actual benchmark (3.2:1) is higher than the target benchmark (3:1). And from the values of last two years, it has been decided to set the new target benchmark at (4:1)	4:1
16	KPI-P-16	Citations rate in refereed journals per faculty member.	40:1	53.7:1	62:1	The actual benchmark (53.7:1) is less than the target benchmark (40:1). And from the values of last two years, it is decided to set the new target benchmark at (40:1)	40:1
17	KPI-P-17	Satisfaction of beneficiaries with the learning resources.	3.75	3.95	3.8	The actual benchmark value is 3.95 is higher	4.0

						than target one (3.75). And from the values of last two years, it is decided to set the new target benchmark to 4.0	
18	KPI-AP-01	Number of research groups in the program	6	8	0	The actual benchmark value is (8) is higher than the target one (6 projects). And from the values of last two years, It is decided to set the new target benchmark to 9.	9
19	KPI-AP-02	The number of funded research projects that the program's employees obtain annually	15	11	5	The actual benchmark value is (11) is lower than the target one (15projects). And from the values of last two years, it is decided to set the new target benchmark to 15	15
20	KPI-AP-03	Percentage of students participating in extra-curricular activities	85%	81.4%	84.13%	The actual benchmark (81.4%) is higher than the target one (85%). It is	80%

						decided to set the new target benchmark to 85%	
21	KPI-AP-04	Employers' satisfaction with the program's mission, visionand goals	4.2	4.57	4.13	The actual benchmark value is based on the survey "Employer Survey on EE Vision Mission & Objectives". The actual benchmark (4.57) is higher than the target one (4.2). It is decided to set the new target benchmark to 4.5	4.5
22	KPI-AP-05	Percentage of the student's graduation projects relatedto the surrounding community	30%	27.75%	25%	The actual benchmark (27.75%) is lower than the target one (30%). And from the values of last two years, it is decided to set the new target benchmark to 30%	30%

Comments on the Program KPIs and Benchmarks results:
- large number of indicators are in use for evaluation of program quality
- Many KPIs showed improvements
- Internal and external data were available for comparisons, the external one was from highly   recognized chemistry program

5. Analysis of Program Evaluation

(Including strengths, Areas for Improvement: and priorities for improvement)

Strengths:

- Many aspects of evaluations done from students, staff, admin staff, graduates (internship), Alumni and employers
- The satisfaction of students for the quality of learning resources, quality of courses, offered services are good.
- Students and Faculty members show a good level of satisfaction with the learning resources.
- The number of funded research projects that the program's employees obtain annually are increased.
- the student's graduation projects relatedto the surrounding community are increased
- The Chemistry program provides sufficient number of full-time teaching staff to the students.
- There is a high degree of job satisfaction at the department, leading to higher retention rates.
- students participating in extracurricular activities increased.
- Promote a number of department members.
- The rate of scientific publishing is increasing through the last three years as the university offered many subsidized project and scientific research groups.

Areas for Improvement:

- Following up alumni who gain a job.
- Following up the offered job opportunities to inform our alumni with it and keep in contact with them.
- Following up the causes for a low proportion of students completing program in minimum possible time through holding periodic meeting with academic advisor.
- Setting a research performance evaluation according to number of granted projects for faculty members.
- Improve the number of funded research projects that the program's employees obtain annually
- Improve the student's graduation projects relatedto the surrounding community are increased.
- Increase Promote a number of department members.
- Improve the program partnership with the community.
- Improvement of counseling process.

Priorities for Improvement:

- Following up the offered job opportunities to inform our alumni with it and keep in contact with them.
- Following up the causes for a low proportion of students completing program in minimum possible time through holding periodic meeting with academic advisor.
- Setting a research performance evaluation according to number of granted projects for faculty members.
- Improve the student's graduation projects relatedto the surrounding community are increased
- improvement of counseling process

G. Difficulties and Challenges Faced Program Management

Difficulties and Challenges	Implications on the Program	Actions Taken
None		

H. Program Improvement Plan

No.	Priorities for Improvement	Actions	Action Responsibility	Date Start	Date End	Achievement Indicators	Target Benchmark
1	Encourage staff for increasing publication	Reward for excellent scientific publication	Head of Department	At year 2021-22		Rate of published research per faculty member.	90%
2	Continuous follow-up of action plans		Quality Committee	At year 2021-22		Monitoring of the Action plans	
3	Recommendation results from evaluation of CLOs and PLOs must be taken in consideration and follow up the action plan		Quality Committee	At year 2021-22		Minutes of meetings	
4	Increase communication with Skot holder And Employer		Survey Committee	At year 2021-22		Employer's Survey and meetings	
5	Increase the number of meetings with advisory committee	Meeting of the Advisory Committee with the Council of the Department of Chemistry	Head of Department	At year 2021-22		The number meeting of Advisory Committee with the Council of the Department of Chemistry	2
6	Increase the program partnership with the	the student's graduation projects related to	Community Partnership Committee	At year 2021-22		Percentage of the student's graduation projects related to the surrounding	30%

	community.	the surrounding community			community	
7	Increase meeting with Council of the Department of Chemistry	Increase meeting of the Advisory Committee with the Council of the Department of Chemistry	Head of Department	At year 2021-22	The number meeting of Advisory Committee with the Council of the Department of Chemistry	3

I. Report Approving Authority

Council / Committee	Chemistry Department
Reference No.	Department Council - Subject 4
Date	13/9/2022

J. Attachments:

• A separate cohort analysis report for male and female sections and for each branch
https://drive.google.com/file/d/1YCpwTbRoIUpvkbxAlHTW2T0Qf6Wnt9sk/view?usp=share_link
https://drive.google.com/file/d/10HZkWpVVQv7o_3Vl_d4l9r6fvOOKGUiH/view?usp=share_link
https://drive.google.com/file/d/1VUehovoJSj_eJk8wYJJ5ymtByxO0l4up/view?usp=share_link

• A report on the program learning outcomes assessment results for male and female sections
https://drive.google.com/file/d/1xn1zij75Jhokcl4Fe6G61ndYEIv4AfFX/view?usp=share_link

• A report on the students' evaluation of program quality
https://drive.google.com/file/d/1h7UmZufp0nZXAtpgdbFIziYrq4JK7vTf/view?usp=share_link
https://drive.google.com/file/d/1dH-gTEcBmNBqRshhAKHrAl6z2gv1N-UV/view?usp=share_link

• Independent reviewer's report and other survey reports
https://drive.google.com/file/d/1C8t4GBkO00UzhHkwFm5yzl8qSb37v0iTS/view?usp=share_link
https://drive.google.com/file/d/14xbO-gq9mT5GiW5-4jFzkzHR09AB48Ea/view?usp=share_link