Program Specification

(Postgraduate)

Program Name: **Master of Science in Environmental Management and Sustainability of Natural Resources**
Program Code (as per the Saudi Standard Classification of Educational Levels and Specializations): **0521**
Qualification Level: Master
Department: Biology
College: College of Science
Institution: King Khalid University
Program Specification: New ☒ updated* ☒
Last Review Date: 10-11-2023

*Attach the previous version of the Program Specification.

Table of Contents

A. Program Identification and General Information:

1. Program's Main Location:

Department of Biology - College of Science - King Khalid University

2. Branches Offering the Program (if any):

Main Campus and the graduate studies building on King Abdullah Road.

3. System of Study:

☐ Coursework & Thesis	☒ Coursework

4. Mode of Study:

☒ On Campus	☐ Distance Education	☐ Other ……(specify)

5. Partnerships with other parties (if any) and the nature of each:

- Partnership Arrangement: None
- Type of Partnership: --
- Duration of Partnership:- --

6. Professions/jobs for which students are qualified:

Experts in the field of environmental science and wildlife development in various sectors, including:

- National Center for Environmental Compliance Oversight.
- National Center of Meteorology.
- National Center for Wildlife Development.
- Saudi Investment Recycling Company.
- National Center for Vegetation Development and Combating desertification.
- National Center for Waste Management.

7. Relevant occupational/ Professional sectors:

None

8. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. ------	------	------
2. ------	------	------
3. ------	------	------
4. ------	------	------

9. Total credit hours: (45)

B. Mission, Goals, and Program Learning Outcomes

1. Program Mission:

Providing a high-quality program academically that qualifies its graduates knowledgeably, and skilfully, for strong competition in the labor market, serving society, and conducting scientific research in environmental sciences and sustainability of natural resources.

2. Program Goals:

1. **Providing a high-quality academic program that qualifies its graduates knowledgeably, and skillfully to serve the community and to strongly compete in the labor market.**
2. **Developing the academic and institutional environment of the program in the light of quality standards which encourage creativity and innovation.**
3. **Providing the necessary ingredients for conducting outstanding scientific research in cooperation with governmental and private agencies concerned with environmental and the sustainability of natural resources.**
4. **Encouraging faculty members to periodically write and translate the updated environmental books and references, in addition to conducting studies, research and assisting students in the field training, and participating in the community service.**
5. **Encouraging students and graduates to conduct research and studies that serve society by solving environmental problems.**

3. Program Learning Outcomes:*

Knowledge and Understanding:	
K1	Describe the fundamental concepts, theories, and principles of the different environmental phenomena and scientific terms.
K2	Explains environmental conditions and their impact on the ecosystem and biodiversity.
K3	Elicit the outline of the advanced processes, techniques, and applications in the field of environmental management science and sustainable development.
Skills:	
S1	Apply the appropriate scientific methods and techniques for analyzing data and solving environmental problems
S2	Measure the biological and environmental control and elicit the different ways in management and maintenance of environmental balances and environmental impact assessment.
S3	Apply scientific methods in treating sources of environmental pollution in factories and facilities.

Values, Autonomy, and Responsibility:	
V1	Work cooperatively and in a team and has a desire for continuous education for academic development
V2	Acts professionally and objectively when dealing with stressful situations.
V3	Ability to communicate effectively with other environmental professionals, understand the limits of knowledge and skill, and seek advice and assistance.

* * Add a table for each track (if any)

C. Curriculum:

1. Curriculum Structure:

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Course	Required	16	39	85%
	Elective	None	None	----
Graduation Project (if any)		1	6	15%
Thesis (if any)		None	None	----
Field Experience(if any)		None	None	----
Others (.....)		None	None	----
Total		17	45	%100

* Add a separated table for each track (if any).

2. Program Courses:

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	6701 ENS	Principles of Environmental Sciences	Required	------	3	Program
	6702 ENS	Wildlife ecology and management	Required	------	2	Program
	6707 ENS	Contemporary trends in ecotourism	Required	------	3	Program
	6705 ENS	Conservation and management of natural resources	Required	------	3	Program
Level 2	6704 ENS	Environmental ethics	Required	------	2	Program
	6703 ENS	Environmental poisoning	Required	------	2	Program
	6706 ENS	Contemporary environmental issues	Required	------	3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	6710 ENS	Environmental Impact Assessment	Required	------	3	Program
Level 3	6205 CHEM	Waste management	Required	------	2	Program
	6708 ENS	Environmental Data Analysis	Required	------	2	Program
	6709 ENS	Management of natural reserves	Required	------	3	Program
	6711 ENS	Seminar	Required	------	2	Program
	6715 ENS	Research skills	Required	------	2	Program
Level 4	6712 ENS	Environmental Economics and Policy	Required	------	2	Program
	6106 GEO	Remote sensing and geographic information systems for resource management	Required	------	2	Program
	6714 ENS	Developing ecosystems and ensuring their sustainability	Required	------	3	Program
	6713 ENS	Research project	Required	------	6	Program

* Include additional levels (for three semesters option or if needed).
** Add a table for the courses of each track (if any)

3. Course Specifications:

Insert hyperlink for all course specifications using NCAAA template (T-104)

https://drive.google.com/drive/folders/16y1YOK3F4Sn6CzTESCzKbzKx-QfdhwoX?usp=share_link

4. Program learning Outcomes Mapping Matrix:

Align the program learning outcomes with program courses, according to the following desired levels of performance *(I = Introduced P = Practiced M = Mastered).*

Course code & No.				Program Learning Outcomes					
	Knowledge and understanding			Skills			Values, Autonomy, and Responsibility		
	K1	K2	K3	S1	S2	S3	V1	V2	V3
Ens6701	I	I	I	I	I	I	I	I	I
Ens6702	I	I	I	I	I	I	I	I	I
Ens6707	I	I	I	I	I	I	I	I	I
Ens6705	I	I	I	I	I	I	I	I	I
Ens6704	M	M	M	M	M	M	M	M	M
Ens6703	M	M	M	M	M	M	M	M	M
Ens6706	M	M	M	M	M	M	M	M	M
Ens6710	M	M	M	M	M	M	M	M	M
Chem6205	M	M	M	M	M	M	M	M	M
Ens6708	M	M	M	M	M	M	M	M	M
Ens6709	M	M	M	M	M	M	M	M	M
Ens6711	M	M	M	M	M	M	M	M	M
Ens6715	M	M	M	M	M	M	M	M	M
Ens6712	M	M	M	M	M	M	M	M	M
Geo6106	M	M	M	M	M	M	M	M	M
Ens6714	M	M	M	M	M	M	M	M	M
Ens6713	P	P	P	P	P	P	P	P	P
Thesis (if any)	---	---	---	---	---	---	---	---	---

* Add a separated table for each track (if any).

5. Teaching and learning strategies applied to achieve program learning outcomes:

Describe teaching and learning strategies, to achieve the program learning outcomes in all areas.

Lectures - Classroom discussions - Software presentation - Free animations and videos - Tutorials - Case studies - Laboratory discussions - Workshops - E-learning.

6. Assessment Methods for program learning outcomes:

Describe assessment methods (Direct and Indirect) that can be used to measure the achievement of program learning outcomes in all areas.

The program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least once in the program's cycle).

Quizzes - Homework - Student Activities - Oral Examination - Seminars - Laboratory Reports - Final Practical Examination - Research Reports - Progress Reports.

D. Thesis and Its Requirements (if any):

1. Registration of the thesis:

(Requirements/conditions and procedures for registration of the thesis as well as controls, responsibilities and procedures of scientific guidance)

None

2. Scientific Supervision:

(The regulations of the selection of the scientific supervisor and his/her responsibilities, as well as the procedures/ mechanisms of the scientific supervision and follow-up)

None

3.Thesis Defense/Examination:

(The regulations for selection of the defense/examination committee and the requirements to proceed for thesis defense, the procedures for defense and approval of the thesis, and criteria for evaluation of the thesis)

None

H. Student Admission and Support:

1. Student Admission Requirements:

- The applicant must be a Saudi, or on an official scholarship if he is not a Saudi.
- The applicant must have a university degree from a Saudi university or another recognized university with a grade of no less than (good).
- He must be of good conduct and medically fit.
- He must submit two academic recommendations from professors who previously taught him.
- The origin a master's and doctorate is full-time, but the University Council may make an exception to this whenever the need arises.

The council of each university may add to these general conditions what it deems necessary.

2. Guidance and Orientation Programs for New Students:

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

Many educational, entertaining and orientation events are held to prepare students for postgraduate studies focusing on important aspects to help the student adapt quickly to academic life, obtain a university card, an ATM card for

their salary, and e-mail. The program includes an open meeting between students, college leaders, and program chairs.

3. Student Counseling Services:

(Academic, professional, psychological and social)

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level)

- The graduate program academic advisor is responsible for guiding students regarding their schedule and providing full support for student registration in program courses. The academic advisor ensures that students are correctly and adequately registered in courses. The academic advisor is also responsible for advising students on their performance and how and when it is appropriate to use academic procedures such as withdrawal and deferral provided by the academic system. Where appropriate, the academic advisor reports to students.
- The program requires a course coordinator to schedule office hours for students. This provides support to students and any other related matters that students may encounter. As students' progress through the program, the course coordinator is also responsible for informing the academic advisor of any problems or challenges.
- Program Coordinator can fulfill Student Counseling Services: The role of the program counselor in guiding students is to provide support to students to choose paths and advise them on career planning at different stages of the program. The program director supervises students' performance and provides feedback when necessary.
- The program director has a pivotal role in directing and counseling students.

4. Special Support:

(Low achievers, disabled, , and talented students).

None

E. Faculty and Administrative Staff:

1. Needed Teaching and Administrative Staff:

Academic Rank	Specialty	Special	Required Numbers

	General	Specific	Requirements / Skills (if any)	M	F	T
Professor	10	--	--	--	--	--
Associate Professor	13	--	--	--	--	--
Assistant Professor	28	--	--	--	--	--
Technicians and Laboratory Assistant	--	--	--	--	--	--
Administrative and Supportive Staff	1	--	--	--	--	--
Others (specify)	--	--	--	--	--	--

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources:

Learning resources required by the Program (textbooks, references, and e-learning resources and web-based resources, etc.)

The program coordinator supervises the required educational materials, references, and electronic resources as described in the course description, and prepares forms for requesting them. He has a network with the coordinators of all courses in the program through which the Deanship of Library Affairs follows up to support web-based sources, reference books, references, and other information. Educational materials.

2. Facilities and Equipment:

(Library, laboratories, classrooms, etc.)

- Six teaching halls equipped with display screens.
- Computers, one computer for each classroom.
- A study library equipped with all the books and references necessary for the program.
- A digital library available on the college's website includes many references, books, and research in the program's specialty.
- Service and educational facilities such as study halls.

3. Procedures to ensure a healthy and safe learning environment:

(According to the nature of the program)

The workplace is prepared taking into account the *Occupational Safety and Health Policy Program* as part of the preparation of the safety statement required by the University. Effective safety and health policies set a clear direction for the

institution to follow, thus fulfilling responsibilities to people and the work environment in adhering to the spirit and letter of the law. In light of this, the department is preparing a reference booklet for occupational and environmental safety as a guide for the practical implementation of the program.

G. Program Quality Assurance:

1. Program Quality Assurance System:

Provide a link to quality assurance manual.

The quality assurance system for the target program requires the elements shown in the diagram as follows:-

- Evaluating the data obtained from the program's courses (the drawn up plan).
- The Quality Assurance Committee's evaluation of the extent to which the learning outcomes in the program have been achieved (implementation of that plan).
- Monitoring the department's annual performance to measure student performance (Monitoring).
- Report of the National Center for Graduate Measurement and Evaluation (review and endoscopy).
- Feedback on improvement and development after various student evaluations (Improve).
- Approving and arranging the external evaluation by the program director (approving what has been done).

2. Program Quality Monitoring Procedures:

Quality control procedures will be carried out through:-

- Advisory Council (under arrangement) which already exists within the administrative structure of the program.
- The program director, department head, college dean, two colleges, and three members from the private sector (target groups) that employs graduates participate in the council.
- Two members from the government sector that employs graduates.

3. Procedures to Monitor Quality of Courses Taught by other Departments:

The courses taught through other departments are arranged as follows:-

- Discuss the course description and list of topics collaboratively with others once agreement has been reached. Planning and Curriculum Committee of the Biology Department. The course description and its approval process are approved by the department, and then the college advisors begin going through the university's procedures.

The quality of courses taught by other departments is monitored by the following:-

- The Biology Department appoints faculty members for the courses, after which the college is responsible for delivering, evaluating, and reporting courses according to the course description. Course faculty must coordinate and report to the Program Director regarding any matter related to the course.

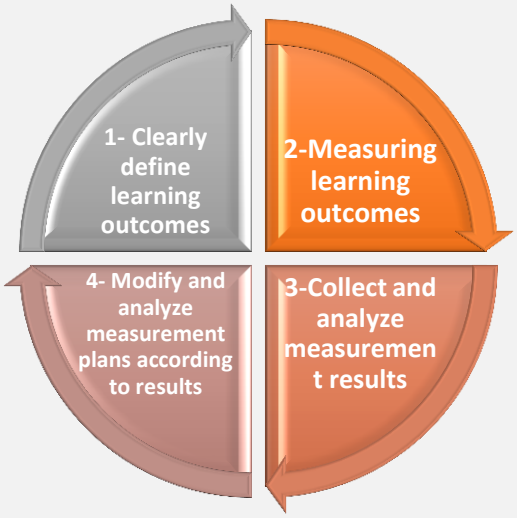
... Student evaluations in learning outcomes, student evaluation of the course, and course report are discussed by the program director and the quality committee; then suggest improvements for the following semester after submitting any major changes in the course to the department advisor with appropriate recommendations.

4. Procedures Used to Ensure the Consistency between within the main campus:

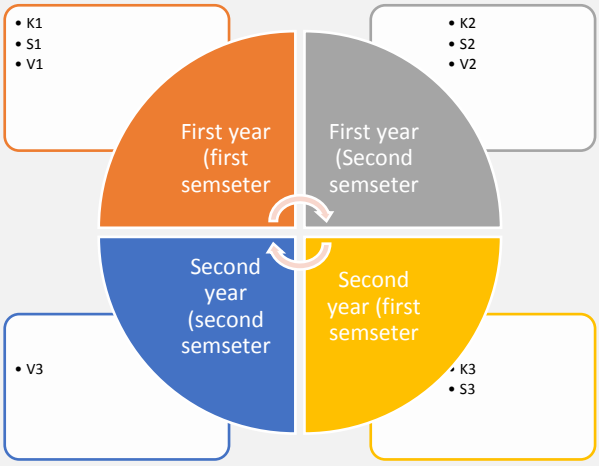
(including male and female sections).

The program is applied including male and female sections.

5. Assessment Plan for Program Learning Outcomes (PLOs):



- First: Determine the program learning outcomes (refer to the table in point 5, program learning outcomes)
- Secondly, measuring learning outcomes:
  Since assessment tasks are designed to measure the achievement of learning outcomes throughout the program, this data should be collected on an ongoing basis (by semester and annually) and evaluated for use in enhancing the program.
  The following schedule shows the time to measure each output:



6. Program Evaluation Matrix:

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Strategies for student feedback for effective teaching.	Students (with guidance from program teachers)	Student questionnaires	End of each session
Quality of learning resources	Course teachers	Direct evaluation	The end of each course and semester
Teaching evaluation	Program/department	Student questionnaires	The end of the

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
strategies	teacher		semester
Checks on student achievement standards	Peer reviewers: by independent staff.	Check the marking of a sample of student work	End of master's programme

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.)
Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others.
Evaluation Methods (e.g., Surveys, interviews, visits, etc.)
Evaluation Time (e.g., beginning of semesters, end of the academic year, etc.)

7. Program KPIs:*

The period to achieve the target (2) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	**KPI-P-1**	Students' Evaluation of Quality of Learning Experience in the Program	+10% of the achieved for the previous year	The percentage of performance indicators for the objectives of the program's operational plan that achieved the targeted annual level to the total number of indicators targeted for these objectives in the same year	annual
2	**KPI-P-2**	Students' evaluation of the quality of the courses	+10% of the achieved for the previous year	Average overall rating of final year students for the quality of learning experiences in the program	annual
3	**KPI-P-3**	Students' evaluation of the quality of academic supervision	+10% of the achieved for the previous year	Average overall students' rating of course quality	annual
4	**KPI-P-4**	Average time for students' graduation	+10% of the achieved for the previous year	Average students' overall rating for the quality of scientific supervision on a five-point scale in an annual survey	annual
5	**KPI-P-5**	Rate of students dropping out of the program	+10% of the achieved for the previous year	The average length of time (in semesters) that students take to graduate from the program	annual
6	**KPI-P-6**	Employers' evaluation of the program graduates' competency	+10% of the achieved for the previous	The percentage of students who did not complete the program to	annual

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
			year	the total number of students in the same batch	
7	**KPI-P-7**	Students' satisfaction with services provided	+10% of the achieved for the previous year	The percentage of program graduates who were employed during the first year of their graduation to the total number of graduates in the same year	annual
8	**KPI-P-8**	Ratio of students to faculty members	+10% of the achieved for the previous year	Average overall employer rating of the competency of program graduates.	annual
9	**KPI-P-9**	Percentage of publications of faculty members	+10% of the achieved for the previous year	Average rating of student satisfaction with the various services provided by the program.	annual
10	**KPI-P-10**	Rate of published research per faculty member	+10% of the achieved for the previous year	The ratio of the total number of students to the total number of teaching staff	annual
11	**KPI-P-11**	Citations rate in refereed journals per faculty member	+10% of the achieved for the previous year	Percentage distribution of categories of teaching staff in terms of (gender - branches - academic rank)	annual
12	**KPI-P-12**	Percentage of students' publication	+10% of the achieved for the previous year	The percentage of teaching members dropping out of the program annually to the total number of teaching members	annual
13	**KPI-P-13**	Number of patents, innovative products, and awards of excellence	+10% of the achieved for the previous year	The average rating of beneficiaries' satisfaction with learning resources, on a five-level scale in an annual survey in terms of: - Its adequacy and diversity - Support services provided to benefit from	annual

*including KPIs required by NCAAA

H. Specification Approval Data:

COUNCIL / COMMITTEE	**Plan and Curricula Committee & Quality and Development Committee**
REFERENCE NO.	
DATE	**1/3/1445 H**

COUNCIL / COMMITTEE	**Approved by Department Council**
REFERENCE NO.	**Department Council Approval no. 4/45**
DATE	**10/3/1445 H – 25/9/2023**

COUNCIL / COMMITTEE	**Approved by College Council**
REFERENCE NO.	**College Council Approval no 11/45**
DATE	**18/6/1445 H**