

Programme Catalogue

College Name	College Abbreviation
Agricultural Engineering Sciences	AES
Department Name (in English)	Department Abbreviation
Soil and Water Sciences	SWSC
Department Name (in Kurdish)	
زانستىن ئاخ و ئافى	
Department Name (in Arabic)	
العلوم التربة والمياه	
1. Qualification awarded	
Bachelor of Science in Soil and Water Sciences	
2. Length of programme	
4 Years	
3. Number of credits	
240 ECTS credits	
4. Level of qualification according to the National Qualification Framework and the European Qualifications Framework	
First cycle, Bachelor's degree	
5. Field(s) of study (e.g. ISCED-F)	
071	
6. Specific admission requirements (if applicable)	
7. Specific arrangements for recognition of prior learning (formal, non-formal and informal) (if applicable)	
The program can recognize formal credits obtained in a formal context if such credits are relevant to the program and validated by the Transcript of Records.	
8. Qualification requirements and regulations, including graduation requirements	
Students should successfully complete all the core courses and collect 240 ECTS credits	
9. Profile of the programme	
The Soil and Water Sciences Department program primarily focuses on studying the interactions between soil, water, and environmental systems to address challenges in sustainable agriculture, natural resource management, and environmental conservation. It encompasses areas such as principles of soil sciences, soil physics, soil fertility, soil microbiology, plant nutrition, soil morphology and geneses, soil classification, soil and water pollution, hydrology, water quality, aquatic chemistry, soil chemistry, irrigation management, soil physio-chemical chemistry, soil ecology and meteorology, watershed managements, soil and water conservation, remote sensing, and GIS, and land use planning, aiming to develop sustainable practices that promote soil and water conservation, enhance crop production, and mitigate environmental impacts.	
10. Programme Educational Objectives	
Graduates of the Soil and Water Sciences programme will, within a few years of graduation, be able to:	
1. Advance Professional Careers: Apply foundational and advanced knowledge of soil and water sciences in careers related to agriculture, environmental management, natural resources, or related industries in public and private sectors.	

2. **Promote Sustainable Land and Water Management:**
Contribute effectively to the planning and implementation of sustainable land use, soil conservation, irrigation, drainage, and water resource management strategies that meet societal and environmental needs.
3. **Engage in Lifelong Learning:**
Pursue further education, research, or professional development through graduate studies, certifications, training, or active involvement in scientific and professional organizations.
4. **Demonstrate Leadership and Teamwork:**
Exhibit strong leadership, communication, and teamwork skills in interdisciplinary and multicultural environments to solve complex problems related to soil and water systems.
5. **Apply Ethical and Responsible Practices:**
Uphold ethical principles, environmental stewardship, and national/international regulations in professional practice and decision-making related to soil and water resource use.

11. Programme learning outcomes

Upon successful completion of the Soil and Water Sciences program, graduates will be able to:

1-Apply Foundational Knowledge: Demonstrate comprehensive understanding of soil science principles, including soil physics, chemistry, fertility, and microbiology, to assess soil health and productivity.

2-Analyze Soil-Water Interactions: Evaluate the interactions between soil and water systems, focusing on hydrology, water quality, and aquatic chemistry to develop sustainable water management strategies.

3-Implement Sustainable Agricultural Practices: Develop and apply sustainable land use and agricultural management plans to optimize plant nutrition and soil fertility while minimizing environmental degradation.

4-Assess Soil and Water Pollution: Identify sources and impacts of soil and water pollution, and recommend appropriate remediation and pollution prevention techniques.

5-Conduct Soil Classification and Mapping: Utilize soil morphology, genesis, and classification methods to accurately characterize and map soil types for effective land use planning.

6-Design and Manage Irrigation Systems: Develop efficient irrigation systems based on soil physio-chemical properties and water availability to support sustainable agricultural practices.

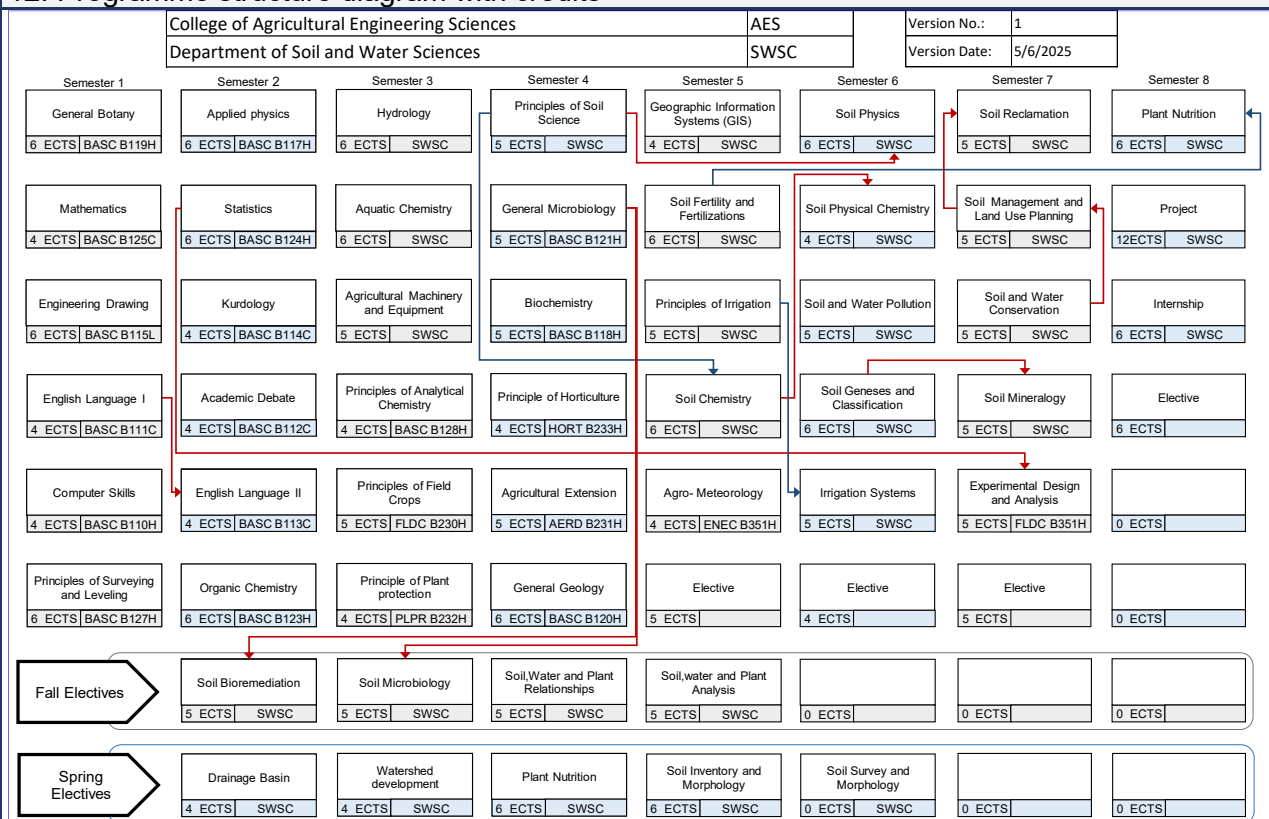
7-Apply Meteorological and Watershed Management Principles: Integrate meteorological data and watershed management techniques to predict and mitigate the effects of climatic variability on soil and water resources.

8-Conduct Research and Data Analysis: Apply quantitative and qualitative research methods to investigate soil and water-related challenges, analyze data, and present findings effectively.

9-Promote Environmental Stewardship: Advocate for soil and water conservation practices that support ecosystem health, biodiversity, and sustainable development.

10-Utilize Modern Technologies: Employ modern analytical tools, remote sensing, and GIS to monitor and manage soil and water resources effectively.

12. Programme structure diagram with credits



13. Mode of Study

Full time

14. Examination regulations and grading scale

The following grading scale is used:

% Points	Grade
90 – 100	Excellent
80 - < 90	Very Good
70 - < 80	Good
60 - < 70	Medium
50 - < 60	Pass
0 - < 50	Fail

15. Mobility window (if applicable)

16. Work placement(s)/internships (if applicable)

The programme includes a 6 ECTS internship opportunity in semester 8

17. Work-based learning (if applicable)

18. Programme director or equivalent

Zeravan Ariff Abdullah

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19. Occupational profiles of graduates

Give a brief description of the types of jobs for which the programme prepares students and/or that graduates generally fulfil.				
20. Access to further studies				
Graduates can apply for admission to higher diploma and 2 nd cycle (Master) studies in related disciplines.				
21. Academic Staff				
No	Name	Scientific Title	Certification	Specialization
1	Mohammed Ali Fayyadh Ahmad	Assistant Professor	PhD	Soil Survey and Management
2	Lazkeen Ahmed Merween Ahmad	Assistant Professor	PhD	Soil Chemistry and Minerals
3	Mustafa Ismail Umer Shaquly	Assistant Professor	PhD	Soil Microbiology
4	Farhad Ali Hashim Mostafa	Assistant Professor	PhD	soil chemistry
5	Hajar Ameen Ameen Hassan	Assistant Professor	PhD	Soil Fertility
6	Zeravan Arif Abdullah Ali	Assistant Professor	PhD	Irrigation
7	Aveen Mohammed Salih Khalil Tamar	Lecturer	PhD	Irrigation
8	Salar Mohammad Ameen Salem Taha	Lecturer	PhD	Environmental Consultant/ Plant Nutrition and Soil Science
9	Shayma Mohammad Rajab Ismail	Assistant Professor	PhD	Soil Physics
10	Marwan Basheer Ismail Karam	Assistant Professor	PhD	Soil and Water Management
11	Sarwar Mohammed Rasheed Ahmad	Assistant Professor	MSc	Soil Fertility
12	Rezan Issa Mosa Esa	Assistant Professor	PhD	Soil Microbiology
13	Vahil Ismael Hassan Mohammed	Assistant Professor	MSc	Forest Soil
14	Hani Mohammed Amin Husein Zenadeen	Assistant Professor	MSc	Heavy Equipment
15	Bakhtiyar Hassan Muhammed Hassan	Assistant Professor	MSc	Soil Microbiology
16	Omar Anwar Omar Mostafa	Lecturer	PhD	Aquatic chemistry
17	Hogir Salim Mohammed Taha	Lecturer	MSc	Plant Nutrition
18	Muradjan Mudhaffar Muhammed Noori	Lecturer	MSc	Irrigation
19	Kazheen Jahwar Taha Abdulqader	Assistant Lecturer	MSc	Analytical Chemistry
20	Hazheen Khaleel Ismael Omar	Assistant Lecturer	MSc	Soil Genesis
21	Azeddin Ali Marouf Hassan	Assistant Lecturer	MSc	Soil Genesis and classification
22	Hiveen Meqdad Ahmed Rassed	Lecturer	MSc	Soil and Water Conservation
23	Sarbast Ismael Abdi Yousif	Lecturer	MSc	Hydrometeorology
24	Kurdistan Idrees Dawud Hussain	Assistant Lecturer	MSc	Soil Contamination
25	Kamiran Azeez Mahmmud Hussain	Assistant Lecturer	MSc	Soil Remote Sensing
26	Payezan Ihsan Ramadan Mostafa	Assistant Lecturer	MSc	Soil Physical Chemistry
27	Haliz Darwish Abdulrahman Hasan	Assistant Lecturer	MSc	Soil Survey and GIS
28	Jasim Saleh Jasim Hassan	Assistant Researcher	MSc	Soil Contamination
29	Nichirvan Ahmed Mohammed Amin Salim	Assistant Researcher	MSc	Soil Physics
30	Sipal Mohammed Taher Yousif Ahmad	Assistant Lecturer	MSc	Land Reclamation
31	Baybeen Saeed Hasen Abeed	Assistant Lecturer	MSc	Soil Chemistry
32	Jilan Naser Muhammed Said	Assistant Lecturer	MSc	Soil Microbiology
33	Mariam Issac Yako Eshoa	Assistant Lecturer	MSc	Soil Minerals

22. Facilities and Resources (Lecture halls, Labs, etc.)

The department uses these facilities:

Type	Quantity	Capacity (students)	Type of use	Equipment included
Lecture Hall	4	40	Dedicated	Projector, whiteboard
Lecture Hall	2	80	Dedicated	Projector, whiteboard
Computer Lab 1	1	30	Dedicated	22 Desktop computers, projector, whiteboard, internet
Fertility Lab.	1	30	Dedicated	All, glass and device needed to analysis soils samples are available.
Soil physic Lab.	1	30	Dedicated	All, glass and device needed to estimate soils physical properties are available.
Microbiology lab.	1	30	Dedicated	The lab. is provided with all tools and device to determine and estimate the microorganisms in the soil sample.

23. Accreditation and recognition

The program is officially recognized by the Ministry of Higher Education and Scientific Research of the Kurdistan Region – Iraq, as well as by the Ministry of Higher Education and Scientific Research of Iraq.