



**Isfahan
University of
Technology**

Department of Natural Resources Engineering

In The Name of God

Contents

	Page
Overview	1
Degree Programs	3
Research	5
Projects	5
Seminars Organized and Held by the Department	6
Desert Ecosystems Field Station, Isfahan (DEFSI)	7
A Profile Of the Labs	8
Information Technology Unit	11
“Payame-e-Sabz” Community	11
Patents	11
Species Discovery	11
Honors and Awards	12

Overview

دانشکده →
منابع طبیعی



Department of Natural Resources Engineering

The Department of Natural Resources Engineering at IUT was established in 1993. The department has offered undergraduate programs of Rangeland and Watershed Management, Environmental and Fisheries Sciences since 1995. Due to the revisions and changes in curriculum titles and programs in recent years, this department is currently offering the following educational programs:

Undergraduate of Natural Resources (former Rangeland and Watershed Management), Environmental Sciences and Fisheries Sciences and Engineering.

Master of Science in Watershed Sciences and Engineering (in the fields of Soil and Water Conservation, Flood and River); Fisheries Sciences and Engineering (in the fields of Aquatic Ecology and Aquaculture); Environmental Sciences and Engineering (in the fields of Environmental Pollution, Land Use Assessment/Planning and Biodiversity Conservation/Management); Rangeland Sciences and Engineering (in the fields of Medicinal and Industrial Plants and Rangeland Management) and PhD in Fisheries Sciences and Engineering (Aquaculture); Environmental Sciences and Engineering (in the fields of Environmental Pollution, Land Use Assessment/Planning and Biodiversity Conservation/Management), Rangeland Management and Engineering.

In addition to the educational groups, the department has a Research Center of Natural Resources and Environmental Research with two research groups of “Management/Recovery of Ecosystems and geomatics” and “Land Use Planning”. This center mainly focuses on applied research on versatile topics related to natural resources.

The Department of Natural Resources Engineering currently has 26 full-time faculty members (1 full professor, 12 associate professors and 13 assistant professors). Also, four retired academics/professors and one adjunct professor (from ETH University) have collaborations with the department.

The number of active students of the department is 438 (225 undergraduates, 137 M. Sc., and 76 PhD students). The total number of graduates since the department establishment until the end of the first semester of the academic year 2018-2019 is 2263 (1549 B.Sc., 696 M.Sc. and 18 Ph.D.).

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Degree Programs

■ B.Sc.

- Fisheries Sciences and Engineering
- Environmental Sciences and Engineering
- Nature Engineering

*134 Credits for courses
+3 Credits for BSc project
+3 credits for internship*

■ M.Sc.

- Fisheries Sciences and Engineering
 - Aquaculture
 - Aquatic Ecology
- Environmental Sciences and Engineering
 - Biodiversity Management and Conservation
 - Environmental Pollution
 - Environmental Assessment and Land Use Planning
- Range Sciences and Engineering
 - Range Management
 - Medicinal and Industrial Plants

- Watershed Management Sciences and Engineering
 - Soil and Water Conservation
 - Flood and River Engineering
- Desert Management and Control

*24 Credits for courses
+6 Credits for MSc thesis*

■ Ph.D.

- Environmental Sciences and Engineering

*18 Credits for courses
+19 Credits for PhD dissertation*

- Fisheries Sciences and Engineering - Aquaculture

*18 Credits for courses
+19 Credits for PhD dissertation*

- Range Sciences and Engineering

*17 Credits for courses
+19 credits for PhD dissertation*

Research

The research activities of the department have been resulted in publication of numerous articles in scientific-indexed journals and national/international conferences. In summary, research activities include Writing 14 books, Translation of 20 books, Compilation of 3 books, 321 articles in ISI journals, 290 articles in ISC journals, 197 papers in national scientific journals, 25 papers in national scientific-promoting journals, 845 papers in national conferences, 346 papers in international conferences (held in Iran) and 124 papers in international conferences (held abroad). In addition, the department has had several research contracts with organizations and institutions including Forest and Rangeland Organization, the Iranian Department of Environment, Ministry of Agriculture, Ministry of Roads and Urban Development, Ministry of Energy, Vice-Presidency for Science and, Fisheries Organization, Ports and Shipping Organization, Ministry of Oil, Management and Planning Organization, Provincial Governments, Municipalities, Gas Company, etc. The current research activities of the department are mainly focusing on the fields of land use planning, site selection and routing, environmental impact assessment, aquaculture and aquatic ecosystems studies, watershed and rangeland management, fighting desertification, vegetation and biodiversity assessment.

Projects

Completed research projects for companies and organizations: 67
Ongoing research projects: 11

■ Seminars Organized and Held by the Department

- The first national seminar on rangelands and their management in Iran (1993)
- Symposium on Integrated Water Resource Management (2009)
- Symposium on degradation and biodiversity threats in the Central Zagros region (2010)
- Symposium on dam construction (2010)
- The seventh National Conference on Watershed Management in Iran(focusing on urban watershed management)(2011)
- The first international conference on landscape ecology (2012)
- The first national conference of Ichthyology, Iran (2013)
- The second international conference on landscape ecology (2015)
- The first International Conference on Geographic Information Systems (the SilkGIS conference) (2016)



Desert Ecosystems Field Station, Isfahan (DEFSI)

This is a climatic-ecological station in the northeastern part of Isfahan. DEFSI was established based on collaboration between the Department of Natural Resources, International Scientific Cooperation Center (ISCC) of Isfahan University of Technology (IUT) and Xinjiang Institute of Ecology and Geography of the Chinese Academy of Science (CAS). By the establishment of DEFSI the Islamic Republic of Iran joins the network of Middle East, Middle Asia, China and Africa Climate-ecology Network. This collaboration started by the 1st SILKGIS international conference and was held at Isfahan University of Technology in 2017 which resulted in bilateral connection and establishment of the DEFSI station.



A Profile of the Labs

■ Environmental Sciences Group

- Environmental Pollution Lab
- Land-use Assessment and Planning Lab
- Wildlife Lab
- Central Lab



■ Fisheries Group

- Fish Farm at the University Complex
- Aquarium Complex
- Fish Nutrition Lab
- Fish Diet Formulation Lab
- Genetics and Biotechnology Lab
- Laboratory of Physiology, Diseases and Hygiene of Aquatic Animals
- Limnology Lab
- Zoology and Ichthyology Lab



■ Rangeland and Watershed Management Group

- Research/Educational Greenhouses
- Herbarium
- Water and Soil Lab
- Phytochemistry Lab
- Cartography Lab
- Botany Lab
- Hydrology and Soil Conservation Lab
- Rangeland Management Lab
- GIS and RS Labs



Information Technology Unit

- PC sites (for B.Sc., M.Sc. And Ph.D. students)
- Equipped classes with multimedia systems
- Seminar room (capacity 75 people)
- Amphitheater (capacity 75 people)

“Payame-e-Sabz” Community

“Payam-e-Sabz” (the Green Massage) population is the first environmental NGO of Isfahan province which was established in the department in 1994 with the aim of “Protecting Natural Resources and Environment”. This NGO was mainly established by a team of university professors to inform the public society to conserve the environment and nature. The community has received the honorary of the Presidency in 2003 as well as the Peace and Environment Award in 2011.

Patents

- Camera traps for wildlife studies
- Hydrostatic pressure apparatus to induce ploidy in aquatic animals
- Production of activated carbon in oil sludge of refineries
- Production of zeolite from stone cutting companies
- Production of antimicrobial coating of titanium on the polymeric network

Species Discovery

- Fish species: *Aphanius Isfahanensis* in Zayandehroud



Honors and Awards

- Outstanding lecturer of the university (one lecturer in 2015)
- Outstanding researchers (three researchers during 2008-2010)
- Outstanding researcher in applied non-university research projects (2011)
- Outstanding researcher selected by the Iranian Forestry and Rangeland Organization (2011)
- Successful executor in conducting research projects outside the university (2015)
- 3rd rank in research papers selected by the Iranian Department of Environment (2009)
- Selected research project (Identification of suitable species for green spaces of Isfahan) in the 1st urban green spaces festival(2006)
- Selected books of the season (two books in 2009 and 2010)
- Obtaining the title of Trusted Environmental Laboratory of the country (the central lab, 2007)
- Selected research center of Isfahan University of Technology (2009)
- University appreciation letters for holding three conferences (2017)
- Selected researcher of the university in receiving international grants (2018)
- Selected researcher of Isfahan Province (2019)

We would like to express our sincere thanks to the faculty members at the Department of Natural Resources Engineering, and our colleagues at International Scientific Cooperation Center (ISCC) for sincere assistance in producing this prospectus.

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