



***Faculty of Natural Resources
Department of Natural Engineering***

BA/BSc Program in Natural Engineering							
First Semester				Second Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
001–98–60	Mathematics (1)	3	No	60–98–124	Morphology and Plant Taxonomy	3	No
–98–125 60	Geology	2	No	60–14–003	Mathematics (1)	3	Mathematics (1)
–98–126 60	Natural Resources Understanding	2	No	60–98–017	General Soil Science	3	No
–98–132 60	Rights and Laws for Natural Resources	2	No	60–98–122	Statistic	3	Mathematics (1)
–98–128 60	Natural Resources Economy	2	No	60–98–123	Public Ecology	2	No
–36–002 10	Foreign Language	3	No	60–14–057	Static	2	Mathematics (1)
–34–001 10	Islamic Thought (1)	2	No	10–36–001	Persian language	3	No
–36–003 10	Physical Education (1)	1	No	10–36–004	Physical Education (1)	1	Physical Education (1)
Third Semester				Fourth Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
–98–037 60	Principal or Remote Sensing	2	No	60–98–025	Cartography	2	Geodesy and Mapping
–14–066 60	General Hydraulic	3	Mathematics (1) Mathematics (2)	60–14–149	Water and Soil and Plant relationship	2	No



-14-156 60	Arid and Semiarid Lands Soil	3	General Soil Science	60-98-127	General Hydrology	2	Weather and Climatology
-98-016 60	Weather and Climatology	3	No	60-14-145	Strength of Materials	2	Static
-98-018 60	Geodesy and Mapping	3	Mathematics (1)	60-14-075	Rangeland Management	3	Public Ecology Morphology and Plant Taxonomy
-14-148 60	Society, Culture and Nature	2	No	60-98-024	Identification of Rangeland Plant Spices (1)	2	Morphology and Plant Taxonomy
-34-002 10	Islamic Thought (2)	3	No	60-14-150	The Desert of Iran and the World	2	No
-	-	-	-	10-34-004	Islamic Ethic	2	No
Fifth Semester				Sixth Semester			
Course Code	Course Title	Credits	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
-98-129 60	Geographic Information System (GIS)	2	No	60-14-153	Geomorphology (1)- Water erosion	3	Geology, Cartography, Geographic Information System (GIS)
-14-035 60	Identification of Rangeland Plant Spices (2)	2	Identification of Rangeland Plant Spices (1)	60-98-131	Experimental Designs in Natural Resources	2	Statistic
-14-160 60	Rangeland Improvement	3	Rangeland Management Identification of Rangeland Plant Spices (1)	60-14-146	Fundamental Economic Valuation of Ecosystem Functions	2	Natural Resources Economy, Rangeland Management
-14-159 60	Applied Hydrology	3	General Hydrology	60-14-067	Technical English Language	2	Foreign Language
-14-158 60	Rangeland Ecology	2	Public Ecology	60-14-070	Rangeland Evaluation and Measurement	3	Rangeland Ecology, Rangeland Management
-14-161 60	Desert and Desert Capability	2	No	60-14-162	Internship 1	3	No
-14-147 60	Multiple-Use from Ecosystem	2	No	10-34-007	Thematic Commentary of the Quran	2	No



-34-005 10	Family and population knowledge	2	No	-	-	-	-
Seventh Semester				Eighth Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-181	Identification and Management of Environmental Crisis	2	No	60-14-022	Watershed Management	3	Soil and Water Conservation
60-98-026	Soil and Water Conservation	3	General Hydrology, General Soil Science, Geomorphology (1) - Water erosion	60-14-155	Planting and Propagation of Rangeland Plants	3	Identification of Rangeland Plant Spices (2), General Soil Science
60-14-154	Geomorphology (1)- Wind erosion	3	Geology, General Soil Science	60-14-151	Soil and Water Conservation Engineering Structure	2	Static, Soil and Water Conservation, Strength of Materials
60-14-157	Soils and Lands Assessment and Potential	3	General Soil Science, Principal or Remote Sensing	60-14-163	Internship 2 (Project)	3	No
60-14-180	Water Resources and Issues in Iran	3	General Hydrology	10-34-005	Islamic revolution of Iran	2	No
10-34-006	Analytical history of the early days of Islam	2	No				

Classification by the Type of the Courses

Course Type	Credits
Public	22
Basic	33
Major: Compulsory	73
Major: Elective	9
Total Units:	137

MA/MSc Program in Watershed Engineering: Floods and River

First Semester				Second Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-224	Research Method	2	No	60-14-231	Flood Forecast and Warning Models	2	No
60-14-225	River Engineering	2	No	60-14-232	River Hydraulic and Sediment	2	No



60-14-226	Integrated Watershed Management	2	No	60-14-233	Numeric Calculation	2	No
60-14-227	Quaternary Formations	2	No	60-14-234	River Mechanic	2	No
60-14-228	Erosion and Sediment Models	2	No	60-14-241	Flood Plain Management	2	No
60-14-229	Urban Watershed	2	No	60-14-243	Echohydrology	2	No
60-14-230	Flood Management and Control	2	No	-	-	-	-
Third Semester				Fourth Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-143	Thesis (Qualitative)	6	No	60-14-143	Thesis (Qualitative)	6	No

Classification by the Type of the Courses	
Course Type	Credits
Major: Common	12
Major: Subdiscipline	10
Elective: Subdiscipline	4
Thesis	6
Total Units:	32

MA/MSc Program in Watershed Engineering: Soil and Water Conservation							
First Semester				Second Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-224	Research Method	2	No	60-14-235	Biological Soil Erosion Control	2	No
60-14-225	River Engineering	2	No	60-14-236	Applied Sedimentology	2	No
60-14-226	Integrated Watershed Management	2	No	60-14-237	Landslide	2	No
60-14-227	Quaternary Formations	2	No	60-14-238	Water Resources Management	2	No
60-14-228	Erosion and Sediment Models	2	No	60-14-239	Snow and Avalanche	2	No
60-14-229	Urban Watershed	2	No	60-14-256	Groundwater	2	No



Third Semester				Fourth Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-246	Advanced GIS	2	No	60-14-143	Thesis (Qualitative)	6	No
60-14-143	Thesis (Qualitative)	6	No	60-14-143	Thesis (Qualitative)	6	No
Classification by the Type of the Courses							
Course Type	Credits						
Major: Common	12						
Major: Subdiscipline	12						
Elective: Subdiscipline	2						
Thesis	6						
Major: Common:	32						

MA/MSc Program in Rangeland Management- Management of Rangeland							
First Semester				Second Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-188	Monitoring and Evaluation of Rangeland	3	No	60-14-191	Analysis of Human and Rangeland Relations	3	No
60-14-190	Medicinal and Industrial Plants	3	No	60-14-189	Engineering of Rangeland Ecosystem	3	No
60-14-194	Rangeland Function Modeling	2	No	60-14-192	Phytosociology	2	No
60-14-203	Advanced Statistical and Probably Methods	2	No	60-14-193	Management of Rangeland and Livestock	2	No
60-14-087	Research Method	1	No	60-14-196	Range Management Plans	2	No
60-14-142	Seminar	2	No	60-14-195	Socio-Policy Networks in Rangeland Management	1	No
Third Semester				Fourth Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites



60-14-143	Thesis (Qualitative)	6	No	60-14-143	Thesis (Qualitative)	6	No
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Classification by the Type of the Courses	
Course Type	Credits
Major: Common	12
Major: Subdiscipline	7
Elective: Subdiscipline	7
Thesis	6
Total Units:	32

MA/MSc Program in Rangeland Management- Rangeland Rehabilitation and Improvement							
First Semester				Second Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-188	Monitoring and Evaluation of Rangeland	3	No	60-14-189	Engineering of Rangeland Ecosystem	2	No
60-14-190	Medicinal and Industrial Plants	3	No	60-14-192	Phytosociology	2	No
60-14-197	Rehabilitation of Arid and Semi-arid Lands	2	No	60-14-191	Analysis of Human and Rangeland Relations	2	No
60-14-198	Rangeland Planting	2	No	60-14-199	Seed od Rangeland Plants	2	No
60-14-087	Special Issue	1	No	60-14-200	Protection and Conservation of Rangeland Plants	2	No
60-14-201	Research Method	2	No	60-14-142	Seminar	2	No
				60-14-205	Cultivation of Medicinal and Industrial Plants	2	No
Third Semester				Fourth Semester			
Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites	Course Code	Course Title	Credit(s)	Prerequisites/Co-requisites
60-14-143	Thesis (Qualitative)	6	No	60-14-143	Thesis (Qualitative)	6	No

Classification by the Type of the Courses	
Course Type	Credits
Major: Common	12
Major: Subdiscipline	8
Elective: Subdiscipline	6
Thesis	6
Total Units:	32