MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

VIETNAM NATIONAL UNIVERSITY OF AGRICULTURE

SOCIALIST REPUBLIC OF VIETNAM

Independence - Freedom - Happiness

UNIVERSITY CURRICULUM

Name of program: WATER RESOURCES ENGINEERING

Level: UNDERGRADUATE

Major: WATER RESOURCES ENGINEERING

Major Code: 52 58 02 12

Type of training: Full time

Objective and Outcome standards:

General Objectives

Training Water Resources engineers who have polictical qualities and good morality, knowledge and capacities to commensurate with the undergraduate level; have the health to meet the requirements of the the industrialization and modernization of the country; Have a serious attitude, work independently and in teams, have the ability to cooperate and manage resources; Ability to adapt the diverse positions in the field of water resources in the training institutions, scientific and technological agencies, management agencies, state-owned enterprises as well as private enterprises; Adapt to the development of a knowledge-based society.

Specific Objectives

About profesional degree: Have the basic specilized knowledge of water resources in both surface water and ground water. After graduation, students will not only get theories but also apply to the reality the knowledge of economics, markets and issues related to the law in conservation and sustainable use of water in agriculture, in the creative and active way. Students can have the ability to apply the knowledge to solve the issues of water use planning in agriculture; to self study, research and update the new knowledge and technologies such as compupers, GIS, remote sensing, economic knowledges, management and foreign languages.

About the morality: Have the morality in working activities, right citizent attitudes.

About the working capacities: Students after graduation can choose the following solutions:

- Agencies of consultant, design, management and development of irrigating systems in agriculture.

- Design and development of irrigation systems in the river basins to develop and protect environmental resources.

- Analyzing, processing, integrating and storing the water resources and environmental information for evaluating the impacts on the river basins, public agencies, institudes and research centers, community and social management and development agencies.

Training period: 5 years

Total volume of knowledge: 159 credits (Exception of physical education and military education)

Candidates:

Pupils who graduated high schools or supplement high school, passed the entrance examination by the Ministry of Education and Training

Training process, conditions for graduation:

According to the decision No 2397QD-HVN, 13rd of August 2015 about Regulations for teaching and studying full time undergraduate under the credit system of the Director of Vietnam National University of Agriculture.

Grading system: 10 then converts to 4

Contents (names and volumes of courses)

No	Code	Vietnamese name	*English name*	Number of Credits	Previous Course	Compulsory	Selective	Knowledge	No	Code
TOTAL GENERAL COURSES				**40**				**40**	**0**	
1	ML01001	Những nguyên lý cơ bản CN Mác-Lênin 1	(Principle of Marxism and leninsm 1)	2	2	0		x		General
2	ML01002	Những nguyên lý cơ bản CN Mác-Lênin 2	(Principle of Marxism and leninsm 2)	3	3	0	Principle of Marxism and leninsm 1	x		
3	ML01004	Đường lối cách mạng của Đảng cộng sản Việt Nam	Revolutionary guideline of Vietnamese Communist Party	3	3	0	Ho Chi Minh Ideology	x		

4	ML01005	Tư tưởng HCM	Ho Chi Minh Ideology	2	2	0	Principle of Marxism and leninsm 2	x		
5	SN01032	Tiếng Anh 1	English 1	3	3	0	English 0	x		
6	SN01033	Tiếng Anh 2	English 2	3	3	0	English 1	x		
7	TH01004	Giải tích 1	Analyse 1	3	3	0		x		
8	TH01005	Giải tích 2	Analyse 2	4	4	0	Analyse 1	x		
9	TH01007	Xác suất thống kê	Probability and Statistics	3	3	0	Analyse 1	x		
10	TH01002	Vật lý đại cương A1	General physics A1	3	2	1		x		
11	CD02104	Cơ học lý thuyết 1	Theorical mechanics 1	3	3	0		x		
12	MT01001	Hóa đại cương	Fundamentals of Chemistry	2	1.5	0.5		x		
13	MT01004	Hóa phân tích	Analytical Chemistry	2	1.5	0.5		x		
14	ML01009	Pháp luật đại cương	Introduction to laws	2	2	0		x		
15	MT02033	Vi sinh vật đại cương	Basic Microbiology	2	1.5	0.5		x		
TỔNG SỐ PHẦN CƠ SỞ NGÀNH				**35**				31/35	4/35	
16	CD 03219	Thủy lực	Hydraulics	3	2	1	Theorical mechanics 1	x		**Based Major**
17	QL02001	Nguyên lý thủy văn	Principles of hydrology	3	3	0		x		
18	QL02002	Thủy văn công trình	Hydrology of engineers	3	2	1		x		
19	CD02114	Cơ học đất	Soil Mechanics	3	3	0		x		
20	CD02132	Hình học họa hình và vẽ kỹ thuật	Descriptive Geometry and Engineering Drawwing	2	1.5	0.5		x		
21	QL02003	Chất lượng nước	Water Quality	2	1.5	0.5	Analytical Chemistry	x		
22	QL02047	Thổ nhưỡng	Pedology	2	1.5	0.5	Fundamentals of Chemistry	x		
23	QL03001	Hải dương học	Oceanography	3	3	0		x		
24	QL02004	Chuyển vận nước và chất trong đất	Water movement and solute transport in soil	3	2	1	Pedology; Hydraulics	x		
25	CD02126	Sức bền vật liệu 1	Strength of Materials 1	3	3	0	Theorical mechanics 1	x		

26	MT01016	Sinh thái đại cương	Basic Ecology	2	2	0		x		
27	NH02005	Phương pháp thí nghiệm	Experimental Methods	2	1.5	0.5	Probability and Statistics	x		
28	MT01006	Khí tượng nông nghiệp	Agrometeorology	2	1.5	0.5	General physics A1		x	
29	MT01008	Sinh thái môi trường	Ecology and Environment	2	2	0			x	
30	TH02009	Phương pháp tính	Numerical methods	3	2	1	Analyse 1		x	
31	NH02019	Cây trồng đại cương	General Introduction of Crop	2	1.5	0.5			x	
TỔNG SỐ PHẦN CHUYÊN NGÀNH				**72**				**54/72**	**18/ 72**	
32	QL03002	Nguyên lý thiết kế dự án	Principles of project design	2	1.5	0.5		x		Major
33	CD02501	Vật liệu xây dựng	Engineering building Materials	2	2	0		x		
34	CD02117	Bê tông cốt thép	Reinforced Concrete	3	3	0	Engineering building Materials	x		
35	QL03003	Cơ học kết cấu	Structural Mechanics	3	2	1		x		
36	KT03057	Kinh tế tài nguyên nước	Water Resource Econoics	2	1.5	0.5		x		
37	CD03103	Công trình thủy lợi và giao thông	Irrigation and Traffic structures desgin	2	1.5	0.5		x		
38	QL02030	Trắc địa	Geodesy	3	2	1		x		
39	CD02611	Kỹ thuật điện	Electric Engineering	2	2	0		x		
40	QL03004	Máy bơm và trạm bơm	Pump and Pumping Station	3	3	0	Irrigation and Traffic structures desgin	x		
41	QL02019	Hệ thống thông tin địa lý	Geographical Information Systems	2	2	0		x		
42	Ql02020	Thực hành hệ thống thông tin địa lý	Practice Geographical Information Systems	1	0	1	Geographical Information Systems	x		
43	QL3056	Quản lý lưu vực	Watershed management	2	1.5	0.5	Principles of hydrology	x		
44	QL03015	Đất dốc và xói mòn	Sloping land and soil erosion	2	2	0		x		
45	QL03035	Quy hoạch phát triển nông thôn	Rural Development Planning	2	1.5	.0.5		x		

46	NH02030	Canh tác học	Cultivation Science	2	1.5	0.5		x		
47	QL03005	Tưới nước	Irrigation	3	2	1		x		
48	QL03006	Tiêu nước	Drainage	2	1.5	0.5		x		
49	QL03007	Phân tích hệ thống và ứng dụng trong quản lý TNN	System analysis and applications water resources	2	2	0		x		
50	QL03008	Nguyên lý quản lý tài nguyên nước	Principles of water Resources Management	2	2	0		x		
51	QL03009	Mô hình hệ thống tài nguyên nước	Modeling of water Resources Systems	3	2	1		x		
52	QL03010	Cấp thoát nước nông thôn	Rural water supply and sanitation	2	2	0	Irrigation; Drainage	x		
53	QL03011	Thiết kế hệ thống tưới, tiêu	Irrigation and Draiage Systems Design	3	2	1	Irrigation; Drainage	x		
54	QL03012	Kỹ thuật tài ngyên nước	Water Resources Engineering	2	2	0		x		
55	SN03054	Tiếng anh chuyên ngành	English for Land Management	2	2		English 2	x		
56	QL03055	Đất ngập nước	Wetland	2	1.5	0.5	Pedology		x	
57	QL02028	Địa chất công trình	Construction Geology	2	1.5	0.5			x	
58	QL03013	Đập nước và công trình thủy điện	Dam and Hydropower Structures	2	2	0	Hydraulics		x	
59	QL03049	Hình thái và chỉnh trị sông ngòi	Morphology and regulating rivers	2	2	0	Principles of hydrology		x	
60	QL01012	Bản đồ địa hình	Topographical Map	2	1.5	0.5			x	
61	QL03051	Tài nguyên nước dưới đất	Groundwater	3	3	0	Principles of hydrology		x	
62	QL03054	Mô hình thủy văn	Hydrological modelling	2	2	0	Principles of hydrology		x	
63	QL02029	Viễn Thám	Remote Sensing	2	1.5	0.5			x	
64	QL03058	Ứng dụng GIS trong quản lý nguồn nước	GIS application in water resources management	2	1	1	Geographical Information Systems		x	
65	QL03059	Quản lý và kiểm soát chất lượng nước	Water quality management and control	3	2	1	Water Quality		x	
66	QL03060	Chính sách tài nguyên nước	Water Resources Policy	2	2	0			x	
67	QL03020	Đất lúa nước	Paddy soil	2	1.5	0.5			x	
68	NH03064	Hệ thống nông nghiệp	Agricultural Systems	2	1.5	0.5			x	

69	MT03004	Đánh giá tác động môi trường	Environmental Impact assessments	2	2	0			x	
70	**QL04005**	**Thực tập nghề nghiệp**	**Fieldtrips**	**2**	**0**	**2**		**2**		
71	**QL04999**	**Đồ án tốt nghiệp**	**Thesis in Water Resouces Engineering**	**10**	**0**	**10**		**10**		