

PROGRAMME CURRICULUM

Programme: Bachelor of Engineering in Aquaculture (Advanced Programme)

Programme code: 7620301

Training time: 4.5 years

Training Level: Undergraduate (Bachelor)

Degree: Engineer in Aquaculture

1. Overall goal of the program

1.1. Overall goal

The overall goal of the program is to train Aquaculture engineers with basic knowledge, professional knowledge on aquaculture and professional skills, and the ability to work independently, directly undertake technical and management work at aquatic production facilities, capable of doing consulting, research, and management work in colleges/universities and institutions, have the ability to self-study and continue to study at a higher level. They can be able to use English fluently to study, research and work at domestic and foreign aquaculture establishments and organizations.

2.2. Program's specific objectives (POs)

- 1) To equip students with knowledge of basic sciences, social sciences, politics – society, laws, national defense education, English, and information technology so as to lay their basis for the acquisition of further and professional knowledge
- 2) To train students for principles, fundamental and specialized aquaculture knowledge such as biology, ecology and aquaculture environment
- 3) To train students for professional skills including reproduction and farming techniques of important aquaculture species; use of common equipment in aquaculture, management and operation of aquaculture hatcheries, farms, feed factories, or services relating to aquaculture and aquatic animal processing plants.
- 4) To instruct students on health training, communication skills and professional manners; scientific research skills and lifelong learning; develop among students a sense of citizenship and professional responsibility.

2. Expected Program Learning Outcomes (PLOs)

Upon completing the AA Programme, students demonstrate the ability to:

General knowledge

1. Generalize knowledge of basic sciences, social sciences, politics – society, laws, physical education, national defense education; obtain current English standards equivalent to level 4/6 of Vietnam's Foreign Language Proficiency Framework (B2 according to the Common European Framework of Reference for Languages)

Fundamental aquaculture knowledge

2. Summarize basic knowledge of water quality parameters, biological (morphology, physiology, nutrition,...) and ecological characteristics of aquaculture species and other aquatic organisms.
3. Describe methods for studying aquaculture species' biology, nutrition requirements, and water quality analyses, as well as statistical and research methods, and scientific writing

Specialized aquaculture knowledge

4. Describe techniques of reproduction, genetic improvement, and farming technology, especially in intensive and advanced systems, of economically valuable aquaculture species.
5. Explain principles of aquatic animal health management, seafood product quality management, farming area planning and development for effective, sustainable, and environmentally friendly farming.

Hard skills

6. Implement seed reproduction and commercial farming techniques for economically valuable species such as striped catfish, native black fish species, black tiger shrimp, white leg shrimp and freshwater prawn
7. Organize and operate hatcheries, commercial farms, fishery services business.

Soft skills

8. Develop communication skills, English skills, international academic exchange, independent and in-group working skills in study and research, information technology skills

Attitudes/Autonomy and Responsibilities

9. Develop awareness of professional ethics, self-study and lifelong learning, and a sense of community responsibility

3. Career prospects

- Technical staff to manage laboratories, hatcheries and aquaculture farms, feed factories and seafood processing plants at companies and farms.
- Business development managers (CEOs) of aquatic products and services and technical consultants at companies.
- Fisheries extension officers, fisheries development planners and managers at national fisheries agencies and international organizations.
- Research and teaching staff at universities, colleges, high schools, fisheries research institutes.
- Technical consultants of international fisheries development and certification organizations.
- Production farm owner, independent trading company.

4. Possibilities of higher education after graduation

- Have the ability to study postgraduate levels related to fisheries at national and international universities.
- Have the ability to self-study, research and apply science and technology to practical production.

5. References when developing the programme

- Aquaculture curricula applied in famous universities in the same field, including Auburn University (USA), Tasmania University (Australia), and Hawaii University (USA).
- General curricula for Agriculture-Forestry and Aquaculture, issued by the Ministry of Education and Training (09/2011/TT-BGDĐT, on 24 February 2011)

6. Curriculum

No		Course name	Number of credits	Compulsory	Elective	Theory hours	Practice hours	Prerequisite course	Semester
English bridging program									
1	FL001H	Listening and speaking 1 (*)	3	3		45			I,II
2	FL002H	Listening and speaking 2 (*)	2	2		30			I,II
3	FL003H	Reading 1 (*)	2	2		30			I,II
4	FL004H	Reading 2 (*)	2	2		30			I,II
5	FL005H	Writing 1 (*)	2	2		30			I,II
6	FL006H	Writing 2 (*)	2	2		30			I,II
7	FL007H	Grammar in use (*)	3	3		45			I,II
8	FL008H	Pronunciation in practice (*)	2	2		30			I,II
9	FL009H	Presentation skills (*)	2	2		30			I,II
Total: 20 credits compulsory									
General course									
10	QP010	Military training 1 (*)	2	2		37	8	Divided by specialised sub-group	
11	QP011	Military training 2 (*)	2	2		22	8		
12	QP012	Military training 3 (*)	2	2		14	16		
13	QP013	Military training 4 (*)	2	2		4	56		
14	TC100	Physical training 1+2 (*)	2		2		60		I,II,III
15	TC013	Physical training (Swimming) (*)	1	1			30		I,II
16	ML014	Marxist – Leninist philosophy	3	3		45			I,II,III
17	ML016	Marxist – Leninist political economy	2	2		30		ML014	I,II,III
18	ML018	Science socialism	2	2		30		ML016	I,II,III
19	ML019	History of the Communist Party of Vietnam	2	2		30		ML018	I,II,III
20	ML021	Ho Chi Minh's thought	2	2		30		ML019	I,II,III
21	TN051	General chemistry I	2	2		30			I,II
22	TN052	Fundamental chemistry-I Laboratory	1	1			30		I,II
23	TN053	Fundamental chemistry II	2	2		30			I,II
24	TN054	Fundamental chemistry-II Laboratory	1	1			30		I,II
25	TN057	General biology	2	2		30			I,II,III

26	TN058	Practical general biology	1	1			30		I,II,III
27	AQ059	Advanced mathematics	3	3		45			I,II
28	ML007	General logic	2			30			I,II,III
29	XH011	Basic Vietnamese culture	2			30			I,II,III
30	XH012	Vietnamese in use	2			30			I,II,III
31	XH014	General management document and archives	2		2	30			I,II,III
32	XH028	Overview of Sociology	2			30			I,II,III
33	KN001	Transferable skills	2			20	20		I,II,III
34	KN002	Entrepreneurship and innovation	2			20	20		I,II,III
Total: 36 credits (Compulsory: 32 credits; Elective: 4 credits)									
<i>Fundamental Aquaculture</i>									
35	AQ101	English for Aquaculture I	2	2		30			I,II
36	AQ102	English for Aquaculture II	2	2		30			I,II
37	AQ218	Water quality analysis	3	3		30	30		I,II
38	AQ205C	General Aquatic Microorganisms	3	3		30	30		I,II
39	AQ206	Introduction to aquaculture and fisheries science	3	3		45			I,II
40	AQ207	Water science	3	3		45			I,II
41	AQ208	General ichthyology	3	3		45			I,II
42	AQ209	Limnology	3	3		30	30		I,II
43	AQ210	Principles of ecology	2	2		30			I,II
44	AQ211	Aquatic animal physiology	3	3		30	30		I,II
45	AQ212	Aquatic animal nutrition	3	3		30	30		I,II
46	AQ214	Applied statistics and experimental design	3	3		30	30		I,II
47	AQ216	Scientific research methodology	2	2		30			I,II
48	AQ217	Practice on fundamental disciplines	4	4			120		I,II,III
49	AQ220	Biology of fishes	2	2		30			I,II
Total: 41 credits (Compulsory: 41 credits)									
<i>Specialized Aquaculture courses</i>									
50	AQ301	Aquaculture production	4	4		45	30		I,II
51	AQ222	Hatchery operation and management	3	3		30	30		I,II
52	AQ303	Shellfish aquaculture	3	3		45			I,II
53	AQ223	Shellfish hatchery operation and management	3	3		30	30		I,II
54	AQ305	Introduction to fish health and clinical fish disease diagnosis	3	3		30	30		I,II
55	AQ306C	Fish and shellfish diseases	3	3		30	30		I,II
56	AQ307	Fish genetic enhancement and resources management	3	3		45			I,II
57	AQ308	Fisheries biology and management	3	3		30	30		I,II
58	AQ224	Facilities for aquaculture	2	2		30			I,II
59	AQ310	Live food culture	2	2		20	20		I,II
60	AQ312C	Aquaculture economics	3	3		45			I,II
61	AQ313	Fisheries laws	2	2		30			I,II
62	AQ225	Practice on aquaculture	5	5			150		I,II
63	AQ315	Seminar/special study	1	1			30		I,II
64	AQ226	Internships	5	5			150		III
65	AQ311	Planning for aquaculture development	2			30			I,II
66	AQ227	Food quality management and safety	2		4	30			I,II
67	AQ228	Biotechnology in aquaculture	2			30			I,II
68	AQ229	Aquatic biomonitoring	2			30			I,II
69	AQ502	Graduation thesis	14	14			420		I,II
Total: 64 credits (Compulsory: 60 credits; Elective: 4 credits)									

Total: 141 credits (Compulsory: 133 credits, Elective: 8 credits) and 20 credits of English bridging program

(): conditional courses, pass required but not included in GPA. Students must pass the exams of National Defence Education, Physical Education and English (or French) as specified by CTU. Students can complete the above courses by submitting certificates according to CTU's regulations or cumulative study.*

Can Tho, date ... month ... year 2022

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