

**UNDERGRADUATE PROGRAM
IN OCEANOLOGY**

Course content for year 1 (Semester 1 and 2):

Subject Codes	Courses	Credits	ECTS Credits	Required/ Optional	Semester
BAA00004	General law	3	4.5	Required	1
CHE00001	General Chemistry 1	3	5	Required	1
MTH00003	Calculus 1B	3	4.5	Required	1
MTH00081	Calculus Laboratory 1B	1	2	Optional1	1
PHY00001	General physics 1 (Mechanics - Thermodynamics)	3	4.5	Required	1
OMH00001	Introduction to Oceanology, Meteorology and Hydrology	3	5.5	Required	1
BAA00011	English 1	3	5	Required	1
CSC00003	Introduction to Informatics	3	5.5	Required	1
BAA00021	Gymnastics 1	2	3.5	Required	1
BAA00030	National Defense Education	4	7	Required	1
BAA00101	Marxist-Leninist Philosophy	3	4.5	Required	2
BAA00102	Marxist–Leninist Political Economy	2	3	Required	2
CHE00002	General Chemistry 2	3	5	Required	2
MTH00004	Calculus 2B	3	4.5	Required	2
MTH00030	Linear Algebra	3	4.5	Required	2
PHY00002	General physics 2 (Electromagnetic - Optics)	3	4.5	Required	2
PHY00081	Labwork on General Physics	2	4	Required	2
OMH10003	Applied Programming	3	5	Required	2
BAA00012	English 2	3	5	Required	2
BAA00022	Gymnastics 2	2	3.5	Required	2

Course content for year 2 (Semester 3 and 4):

Subject Codes	Courses	Credits	ECTS Credits	Required/ Optional	Semester
BAA00103	Scientific Socialism	2	3	Required	3
BAA00104	History of Vietnamese Communist Party	2	3	Required	3
BAA00003	Ho Chi Minh 's Ideology	2	3	Required	3
MTH00040	Probability and Statistics	3	4.5	Required	3
BIO00001	Fundamental Biology 1	3	4.5	Optional2	3
BIO00002	Fundamental Biology 2	3	4.5	Optional2	3
BAA00005	Basic Economics	2	3	Optional3	3
BAA00006	Creative Methodology	2	3	Optional3	3
BAA00007	Psychology	2	3	Optional3	3
ENV00001	Fundamental of Environment Science	2	3	Required	3
OMH10001	Computational Methods	3	5	Required	3
PHY10001	Functions of a Complex Variable	2	3	Required	3
BAA00013	English 3	3	5	Required	3
OMH10002	Mathematical Methods for Physics	3	4.5	Required	4
OMH10004	Fluid Mechanics	3	4.5	Required	4
OMH10006	Introduction to Oceanography	2	3	Required	4
OMH10007	Introduction to Meteorology	2	3	Required	4
OMH10008	Introduction to Hydrology	2	3	Required	4
OMH10009	Measurements and Analysis of Random Data	3	5	Required	4
BAA00014	English 4	3	5	Required	4

Course content for year 3 (Semester 5 and 6):

Subject Codes	Courses	Credits	ECTS Credits	Required/ Optional	Semester
Speciality of Oceanology					
OMH10005	General Astronomy	2	3	Required	5

OMH10010	Introduction to Ocean-Atmosphere Interaction	2	3	Required	5
OMH10011	Introduction to Geophysical Fluid Dynamics	3	4.5	Required	5
OMH10012	Numerical Modelling for Geophysical Flows	2	3.5	Required	5
OMH10014	Remote Sensing and GIS	3	5	Required	5
OMH10015	Practical Oceanography, Meteorology and Hydrology	1	2	Required	5
OMH10017	Data mining in Earth Science	2	3.5	Required	5
OMH10102	Introduction to Marine Geomorphology and Geology	2	3	Required	5
OMH10016	Environmental Pollution	2	3.5	Required	6
OMH10104	Oceanic Currents and Water Circulation	3	4.5	Required	6
OMH10105	Water Wave Mechanics	2	3	Required	6
OMH10106	Tides	3	6	Required	6
OMH10108	Practical Oceanography	2	3.5	Required	6
OMH10013	Methods of Data Mining 1	2	3	Optional	6
OMH10101	Physical Geography	2	3.5	Optional	6
OMH10103	Introduction to Estuaries	2	3.5	Optional	6
OMH10107	Special Topics in Oceanography	2	3	Optional	6
OMH10115	Marine Physics	2	3.5	Optional	6
OMH10116	Ocean Surface Waves	2	3	Optional	6
OMH10118	Bio-Geochemical Cycles	2	3	Optional	6

OMH10120	Data Management and Analysis in Oceanology, Meteorology and Hydrology	2	3.5	Optional	6
OMH10309	Hydrological Agriculture and Urban	2	3.5	Optional	6
OMH10410	Coastal processes along the Mekong Delta	3	4.5	Optional	6
Speciality of Meteorology					
OMH10005	General Astronomy	2	3	Required	5
OMH10010	Introduction to Ocean-Atmosphere Interaction	2	3	Required	5
OMH10011	Introduction to Geophysical Fluid Dynamics	3	4.5	Required	5
OMH10012	Numerical Modelling for Geophysical Flows	2	3.5	Required	5
OMH10014	Remote Sensing and GIS	3	5	Required	5
OMH10015	Practical Oceanography, Meteorology and Hydrology	1	2	Required	5
OMH10017	Data mining in Earth Science	2	3.5	Required	5
OMH10201	Introduction to Thermodynamics of the Atmosphere	2	3	Required	5
OMH10016	Environmental Pollution	2	3.5	Required	6
OMH10202	An Introduction to Dynamic Meteorology	3	4.5	Required	6
OMH10203	Synoptic Meteorology	2	3	Required	6
OMH10206	Practical Meteorology	3	6	Required	6
OMH10013	Methods of Data Mining 1	2	3.5	Optional	6
OMH10101	Physical Geography	2	3	Optional	6
OMH10118	Bio-Geochemical Cycles	2	3.5	Optional	6

OMH10120	Data Management and Analysis in Oceanology, Meteorology and Hydrology	2	3.5	Optional	6
OMH10204	Climatology and Climate in Vietnam	2	3	Optional	6
OMH10205	Special Topics in Meteorology	2	3.5	Optional	6
OMH10208	Introduction to Boundary Layer Meteorology	2	3	Optional	6
OMH10309	Hydrological Agriculture and Urban	2	3	Optional	6
OMH10410	Coastal processes along the Mekong Delta	2	3.5	Optional	6
Speciality of Hydrology					
OMH10005	General Astronomy	2	3	Required	5
OMH10010	Introduction to Ocean-Atmosphere Interaction	2	3	Required	5
OMH10011	Introduction to Geophysical Fluid Dynamics	3	4.5	Required	5
OMH10012	Numerical Modelling for Geophysical Flows	2	3.5	Required	5
OMH10014	Remote Sensing and GIS	3	5	Required	5
OMH10015	Practical Oceanography, Meteorology and Hydrology	1	2	Required	5
OMH10301	River Dynamics	2	3	Required	5
OMH10017	Data mining in Earth Science	2	3.5	Required	5
OMH10016	Environmental Pollution	2	3.5	Required	6
OMH10303	Watershed Hydrology	2	3	Required	6
OMH10305	Practical Hydrology	3	6	Required	6
OMH10307	Estuarine Hydro-Ecology	2	3	Required	6

OMH10013	Methods of Data Mining 1	2	3.5	Optional	6
OMH10101	Physical Geography	2	3	Optional	6
OMH10118	Bio-Geochemical Cycles	2	3.5	Optional	6
OMH10120	Data Management and Analysis in Oceanology, Meteorology and Hydrology	2	3.5	Optional	6
OMH10302	Hydraulics	3	4.5	Optional	6
OMH10304	Hydrological Topics	2	3.5	Optional	6
OMH10306	Geography and Hydrogeology	2	3	Optional	6
OMH10309	Hydrological Agriculture and Urban	2	3	Optional	6
OMH10410	Coastal processes along the Mekong Delta	2	3.5	Optional	6
Speciality of Oceanology – Meteorology – Hydrology					
OMH10005	General Astronomy	2	3	Required	5
OMH10010	Introduction to Ocean-Atmosphere Interaction	2	3	Required	5
OMH10011	Introduction to Geophysical Fluid Dynamics	3	4.5	Required	5
OMH10012	Numerical Modelling for Geophysical Flows	2	3.5	Required	5
OMH10014	Remote Sensing and GIS	3	5	Required	5
OMH10015	Practical Oceanography, Meteorology and Hydrology	1	2	Required	5
OMH10017	Data mining in Earth Science	2	3.5	Required	5
OMH10016	Environmental Pollution	2	3.5	Required	6
OMH10401	Dynamics of Marine Environment	2	3.5	Required	6

OMH10403	Dynamics of Atmospheric Environment	2	3.5	Required	6
OMH10406	Practical Majors	4	8	Required	6
OMH10013	Methods of Data Mining 1	2	3.5	Optional	6
OMH10101	Physical Geography	2	3	Optional	6
OMH10115	Marine Physics	2	3	Optional	6
OMH10116	Ocean Surface Waves	2	3	Optional	6
OMH10118	Bio-Geochemical Cycles	2	3.5	Optional	6
OMH10120	Data Management and Analysis in Oceanology, Meteorology and Hydrology	2	3.5	Optional	6
OMH10208	Introduction to Boundary Layer Meteorology	2	3	Optional	6
OMH10309	Hydrological Agriculture and Urban	2	3	Optional	6
OMH10402	Coastal processes	2	3.5	Optional	6
OMH10404	Marine eco-hydrology Dynamics	2	3.5	Optional	6
OMH10405	Special Topics in Oceanology, Meteorology, and Hydrology	3	5	Optional	6
OMH10410	Coastal processes along the Mekong Delta	2	3.5	Optional	6

Course content for year 4 (Semester 7 and 8):

Subject Codes	Courses	Credits	ECTS Credits	Required/Optional	Semester
Speciality of Oceanology					
OMH10109	Modelling Tools for Oceanographers	2	3.5	Optional	7
OMH10110	Sediment Transport	2	3.5	Optional	7

OMH10111	Chemical Oceanography	2	3.5	Optional	7
OMH10112	Marine Ecosystem	2	3	Optional	7
OMH10113	Physical Oceanography in the East Sea	2	3	Optional	7
OMH10114	Marine Governance and Marine Economics	2	3	Optional	7
OMH10117	Resources of Marine Environment and Climate Change	2	3	Optional	7
OMH10119	Methods of Data Mining 2	2	3.5	Optional	7
OMH10210	Agricultural Climate	2	3	Optional	7
OMH10212	Tropical Meteorology	2	3	Optional	7
OMH10216	Statistical Methods in Climatology	2	3	Optional	7
OMH10310	Computational Hydrology	2	3.5	Optional	7
OMH10311	Prediction of Hydrology	2	3.5	Optional	7
OMH10314	Environmental Hydrology	2	3.5	Optional	7
OMH10411	Special subJECTS Credits of natural risk and environmental assessment	2	3	Optional	7
OMH10412	Advanced data mining techniques and applications	2	3.5	Optional	7
OMH10413	Application of advanced technology in Agro-Meteorology	2	3.5	Optional	7
OMH10395	Graduation Thesis	10	20	Required	8
OMH10390	Graduation Seminar	4	8	Required	8
OMH10121	Special Topics in Ocean-Atmosphere Interaction	2	3.5	Optional	8
OMH10202	An Introduction to Dynamic Meteorology	3	4.5	Optional	8
OMH10203	Synoptic Meteorology	2	3	Optional	8
OMH10204	Climatology and Climate in Vietnam	2	3	Optional	8
OMH10205	Special Topics in Meteorology	2	3.5	Optional	8
OMH10218	Data analysis and weather prediction by statistical methods	2	3.5	Optional	8

OMH10301	River Dynamics	2	3	Optional	8
OMH10304	Hydrological Topics	2	3.5	Optional	8
OMH10306	Geography and Hydrogeology	2	3	Optional	8
OMH10307	Estuarine Hydro-Ecology	2	3	Optional	8
Speciality of Meteorology					
OMH10207	Modelling Tools in Meteorology	2	3.5	Optional	7
OMH10209	Numerical Prediction	2	3	Optional	7
OMH10210	Agricultural Climate	2	3	Optional	7
OMH10211	Aeronautical Meteorology	2	3	Optional	7
OMH10212	Tropical Meteorology	2	3	Optional	7
OMH10213	Weather Prediction by numerical methods	2	3.5	Optional	7
OMH10214	Introduction to Ocean Climate and Air-Sea Interaction	2	3	Optional	7
OMH10215	Microclimatology	2	3	Optional	7
OMH10216	Statistical Methods in Climatology	2	3	Optional	7
OMH10217	Introduction to Atmospheric Convection	2	3	Optional	7
OMH10113	Physical Oceanography in the East Sea	2	3	Optional	7
OMH10114	Marine Governance and Marine Economics	2	3	Optional	7
OMH10117	Resources of Marine Environment and Climate Change	2	3	Optional	7
OMH10119	Methods of Data Mining 2	2	3.5	Optional	7
OMH10311	Prediction of Hydrology	2	3.5	Optional	7
OMH10411	Special subJECTS Credits of natural risk and environmental assessment	2	3	Optional	7
OMH10412	Advanced data mining techniques and applications	2	3.5	Optional	7
OMH10413	Application of advanced technology in Agro-Meteorology	2	3.5	Optional	7
OMH10395	Graduation Thesis	10	20	Required	8

OMH10390	Graduation Seminar	4	8	Required	8
OMH10103	Introduction to Estuaries	2	3	Optional	8
OMH10104	Oceanic Currents and Water Circulation	2	3.5	Optional	8
OMH10106	Tides	2	3.5	Optional	8
OMH10107	Special Topics in Oceanography	2	3.5	Optional	8
OMH10121	Special Topics in Ocean-Atmosphere Interaction	2	3.5	Optional	8
OMH10218	Data analysis and weather prediction by statistical methods	2	3.5	Optional	8
OMH10301	River Dynamics	2	3	Optional	8
OMH10304	Hydrological Topics	2	3.5	Optional	8
OMH10306	Geography and Hydrogeology	2	3	Optional	8
OMH10307	Estuarine Hydro-Ecology	2	3	Optional	8
Speciality of Hydrology					
OMH10308	Hydrological Modelling Tools	2	3.5	Optional	7
OMH10310	Computational Hydrology	2	3.5	Optional	7
OMH10311	Prediction of Hydrology	2	3.5	Optional	7
OMH10312	Hydrological and Hydraulics Models	2	3.5	Optional	7
OMH10313	Hydrologic Measurement	2	3.5	Optional	7
OMH10314	Environmental Hydrology	2	3.5	Optional	7
OMH10315	River Engineering	2	3	Optional	7
OMH10316	Management of Water Resources	2	3	Optional	7
OMH10110	Sediment Transport	2	3.5	Optional	7
OMH10113	Physical Oceanography in the East Sea	2	3	Optional	7
OMH10114	Marine Governance and Marine Economics	2	3	Optional	7
OMH10117	Resources of Marine Environment and Climate Change	2	3	Optional	7
OMH10119	Methods of Data Mining 2	2	3.5	Optional	7
OMH10210	Agricultural Climate	2	3	Optional	7
OMH10214	Introduction to Ocean Climate and Air-Sea Interaction	2	3	Optional	7

OMH10216	Statistical Methods in Climatology	2	3	Optional	7
OMH10411	Special subJECTS Credits of natural risk and environmental assessment	2	3	Optional	7
OMH10412	Advanced data mining techniques and applications	2	3.5	Optional	7
OMH10413	Application of advanced technology in Agro-Meteorology	2	3.5	Optional	7
OMH10395	Graduation Thesis	10	20	Required	8
OMH10390	Graduation Seminar	4	8	Required	8
OMH10103	Introduction to Estuaries	2	3	Optional	8
OMH10104	Oceanic Currents and Water Circulation	2	3.5	Optional	8
OMH10106	Tides	2	3.5	Optional	8
OMH10107	Special Topics in Oceanography	2	3.5	Optional	8
OMH10121	Special Topics in Ocean-Atmosphere Interaction	2	3.5	Optional	8
OMH10202	An Introduction to Dynamic Meteorology	3	4.5	Optional	8
OMH10203	Synoptic Meteorology	2	3	Optional	8
OMH10204	Climatology and Climate in Vietnam	2	3	Optional	8
OMH10205	Special Topics in Meteorology	2	3.5	Optional	8
OMH10218	Data analysis and weather prediction by statistical methods	2	3.5	Optional	8
Speciality of Oceanology – Meteorology – Hydrology					
OMH10407	Modelling Tools	3	5.5	Optional	7
OMH10408	Weather Forecast	2	3.5	Optional	7

OMH10102	Introduction to Marine Geomorphology and Geology	2	3	Optional	7
OMH10110	Sediment Transport	2	3.5	Optional	7
OMH10113	Physical Oceanography in the East Sea	2	3	Optional	7
OMH10114	Marine Governance and Marine Economics	2	3	Optional	7
OMH10117	Resources of Marine Environment and Climate Change	2	3	Optional	7
OMH10119	Methods of Data Mining 2	2	3.5	Optional	7
OMH10210	Agricultural Climate	2	3	Optional	7
OMH10211	Aeronautical Meteorology	2	3	Optional	7
OMH10212	Tropical Meteorology	2	3	Optional	7
OMH10216	Statistical Methods in Climatology	2	3	Optional	7
OMH10310	Computational Hydrology	2	3.5	Optional	7
OMH10311	Prediction of Hydrology	2	3.5	Optional	7
OMH10314	Environmental Hydrology	2	3.5	Optional	7
OMH10411	Special subJECTS Credits of natural risk and environmental assessment	2	3	Optional	7
OMH10412	Advanced data mining techniques and applications	2	3.5	Optional	7
OMH10413	Application of advanced technology in Agro-Meteorology	2	3.5	Optional	7
OMH10395	Graduation Thesis	10	20	Required	8
OMH10390	Graduation Seminar	4	8	Required	8
OMH10103	Introduction to Estuaries	2	3	Optional	8
OMH10107	Special Topics in Oceanography	2	3.5	Optional	8
OMH10121	Special Topics in Ocean-Atmosphere Interaction	2	3.5	Optional	8
OMH10204	Climatology and Climate in Vietnam	2	3	Optional	8
OMH10205	Special Topics in Meteorology	2	3.5	Optional	8
OMH10218	Data analysis and weather prediction by statistical methods	2	3.5	Optional	8
OMH10304	Hydrological Topics	2	3.5	Optional	8

OMH10306	Geography and Hydrogeology	2	3	Optional	8
OMH10307	Estuarine Hydro-Ecology	2	3	Optional	8
OMH10409	Integrated Coastal Zone Management	2	3	Optional	8