MARINE TECHNOLOGY, BACHELOR OF SCIENCE

NMC Code 870

The Bachelor of Science in Marine Technology major at NMC prepares students to meet the needs of the global marine industry including underwater exploration, offshore renewable energies, marine science and research, hydrographic surveying, and underwater infrastructure/telecommunication. This is the only Bachelor of Science degree of its kind in the United States. Graduates are in high demand for global employment opportunities which are extremely diverse and continually growing. Every graduate of this program has received immediate employment offers upon graduation. Technical training will occur at numerous campus labs, NMC's Great Lakes campus harbor, and aboard research vessels operating throughout the Great Lakes. Program emphasis is focused on project management, technical competencies, and hands-on learning with students having direct access to remotely operated vehicles, multiple SONAR platforms, marine instrumentation, and marine data processing software. Instruction will be provided by highly trained instructors with experience in the industry.

Within this degree students will have the opportunity to earn the following: CSWA Certified Solidworks Associate, PCEP- Certified Entry-Level Python Programmer, HAZWOPER 40-hour certification, FAA Part 107, and Certified Associate in Project Management (CAPM).

Requirements
Major Requirements

Course	Title	Credits
General Education Requirements		
ENG 111	English Composition	4
ENG 220	Technical Writing	3
Group I Humanities		
MTH 121	College Algebra	4
MTH 122	Trigonometry	3
MTH 131	Intro to Prob & Stats	3
PHY 121	General Physics I	4
PHY 121L	General Physics I Lab	0
ECO 202	Principles of Microeconomics	3
GEO 115	Introduction to GIS	3

Course	Title	Credits
Marine Technology Requirements		
DD 170	CADD/Computer Modeling	4
EET 103	Electrical Studies I	3
EET 204	Electrical Studies II	3
WSI 304	Marine Electronics	
ENV 117	Meteorology & Climatology	4
ENV 117L	Meteorology & Climatology Lab	0
ENV 131	Oceanography	4
ENV 131L	Oceanography Lab	0
MFG 104	Fluid Power	3
RAM 155	Microcontroller Programming	3
RAM 205	Microcontroller Systems	3

Course	Title	Credits
SVR 111	Intro to Field Surveying	2
UAS 121	UAS Applications in Surveying	3
WSI 106	Introduction to Water Quality	3
WSI 200	GL Research Technologies	3
WSI 210	Underwater Acoustics and Sonar	3
WSI 215	Marine GIS & Data Processing	3
WSI 240	ROV Systems and Operations	3
WSI 300	Remote Sensing and Sensors	3
WSI 310	Sonar Systems and Operations	4
WSI 315	Advanced Marine Survey & Data	3
WSI 390	Marine Tech Internship	2-4
WSI 400	Marine Technology Capstone	4
WSI 405	Marine Industry	3
WSI 433	Marine Project Management	3
WSI 440	Advanced Marine Platforms	3

Course	Title	Credits
Electives		
MTH 141	Calculus I	5
PHY 122	General Physics II	4
PHY 122L	General Physics II Lab	0
EET 260	System Engineering in Practice	3
ENV 111	Physical Geology	
ENV 111L	Physical Geology Lab	
MFG 304	Marine Hydraulics	3
RAM 255	Microcontroller Automation	3
WSI 110	OSHA HAZWOPER 40 hour	3
WSI 150	Introduction to Site Assessment and Remediation	3
WSI 230	Water Policy & Sustainability	3
WSI 250	Groundwater Monitoring and Aquifer Sampling	4
SVR 112	Intro to Surveying Data Use	3
SVR 120	CAD for Surveying	4
UAS 141	Remote Pilot Flight	3
WPT 111	Welding Theory I	3
WPT 112	Welding Lab I	4
CIT 110	Programming Logic and Design	3
CIT 135	Introduction to Programming Using Python	3
CIT 190	JavaScript Programming	3

Course Sequence Guide

Course	Title	Credits
Year 1		
Fall		
ENG 111	English Composition	4
PHL 105 or PHL 203	Critical Thinking or Environmental Ethics	3
EET 102	Intro to Engineering Tech	2
EET 103	Electrical Studies I	3
RAM 155	Microcontroller Programming	3
	Credits	15
Spring		
ENG 220	Technical Writing	3
RAM 205	Microcontroller Systems	3

DD 170	CADD/Computer Modeling	4
EET 204	Electrical Studies II	3
	Credits	**13**
Summer		
WSI 200	GL Research Technologies (Summer only)	3
	Credits	**3**
Year 2		
Fall		
MTH 121	College Algebra	4
GEO 115	Introduction to GIS	3
MFG 104	Fluid Power	3
WSI 210	Underwater Acoustics and Sonar (Fall only)	3
WSI 240	ROV Systems and Operations (Fall only)	3
	Credits	**16**
Spring		
MTH 122	Trigonometry	3
ENV 117	Meteorology & Climatology	4
EET 260	System Engineering in Practice (Spring only)	3
WSI 215	Marine GIS & Data Processing (Spring only)	3
WSI 315	Advanced Marine Survey & Data (Spring only)	3
	Credits	**16**
Summer		
WSI 310 or WSI 440	Sonar Systems and Operations (Summer only) or Advanced Marine Platforms	3-4
	Credits	**3-4**
Year 3		
Fall		
MTH 141	Calculus I	5
PHY 121	General Physics I (Fall only)	4
WSI 304	Marine Electronics	3
WSI 300	Remote Sensing and Sensors	3
	Credits	**15**
Spring		
PHY 122	General Physics II (Spring only)	4
ENV 131	Oceanography	4
MFG 304	Marine Hydraulics (Spring only)	3
MTH 131	Intro to Prob & Stats	3
	Credits	**14**
Summer		
WSI 390	Marine Tech Internship [1]	3
Or WSI 297A Independent Study - Water Studies		
WSI 440 or WSI 310	Advanced Marine Platforms or Sonar Systems and Operations	3-4
	Credits	**6-7**
Year 4		
Fall		
WSI 405	Marine Industry (Fall only)	3
ECO 202	Principles of Microeconomics	3
Approved Technical Elective		3
	Credits	**9**

Spring		
PHL 202	Contemporary Ethical Dilemmas	3
WSI 400	Marine Technology Capstone	4
WSI 433	Marine Project Management (Spring only)	3
Optional: Internship **or** Independent Study		3
	Credits	**10**
	Total Credits	**120-122**

[1]

WSI 390 Marine Tech Internship **or** WSI 297A Independent Study - Water Studies **option to take Summer year 3 OR Spring year 4**