Roadmap to Graduation- 4-year Plan

Program Name: Bachelor of Sciences, Fisheries and Marine Sciences

Concentration: No Concentration (asynchronous)

Unit: College of Fisheries and Ocean Sciences

Catalogs: 2021-2022, 2022-2023

FIRST Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
WRTG F111X	Writing Across Contexts	Communication GER 1	3	Fall & Spring
BIOL F115X	Fundamentals of Biology I	N GER 1, prereq. For BIOL F260, BIOL F371, MSL F320 (major)	4	Fall & Spring
CHEM 105X	General Chemistry I	N degree requirement, prereq. For BIOL F260	4	every semester
FISH F102 or MSL F102	Fact or Fishin': Case Studies in Fisheries and Marine Sciences	Major, Seminar, prereq. For FISH F103 (major)	1	Fall
FISH F110	Fish and Fisheries in a Changing World or FT S272- Fisheries Management, Law and Economics as direct transfer	Major, prereq. FISH F103 (major)	3	Fall
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
BIOL F116X	Fundamentals of Biology II	N GER 2, prereq. For MSL F320 (major), BIOL F260, BIOL F371	4	Fall & Spring
LS F101X	Library Information and Research	Library & Information Research-Degree	1	every semester
*MATH F230X or MATH F251X	Essential Calculus with Applications (3 credits)/ Calculus I (4 credits)	M GER 1, prereq. for MSL F211 (major)	3	Fall & Spring
CHEM F106X	General Chemistry II	N degree requirement	4	every semester
FISH F103	The Harvest of the Sea	Major	2	Spring
Total:			14	
First Yr Total Projected:			**29**	

SECOND Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
COJO F141X	Fundamentals of Oral Communication: Public Context	Recommend: Communication GER 2, prereq. for FISH F487 (major) and ENGL F314	3	every semester
*ECON F235X or ECON F101X	*Introduction to Natural Resource Economics/ Principles of Microeconomics	S GER 1	3	Fall/ every
STAT F200X	Elementary Statistics	M degree requirement, prereq. for MSL F303 and STAT F401/STAT F402 (major)	3	Fall & Spring
MSL F211	Introduction to Marine Science I	Major, prereq. for MSL F212 (major)	3	Fall
		FISH/MSL concentration course 1	3	
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
		H GER 1	3	
WRTG 213X	Writing and the Sciences	Recommend: Communication GER 3, prereq. For ENGL F314	3	Fall & Spring
MSL F212	Introduction to Marine Science II	Major, prereq. for MSL F303 (major)	3	Spring
FISH F288	Fish and Fisheries of Alaska	Recommend: prereq. For FISH F487 (concentration), FISH/MSL concentration course 1	3	Spring
		FISH/MSL concentration course 2	3	
Total:			15	

SUMMER				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
FISH F490	Experiential Learning: Fisheries and Marine Sciences Internship	Major, UD	1	every semester (typically summer)
Total:			1	
Second Yr Total Projected:			**31**	

THIRD Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
		S GER 2	3	
*PHYS F123X or PHYS F115 or PHYS F211X	College Physics I/ Physical Sciences/ General Physics I	Major, N degree requirement	4	Fall/ Spring/ Fall & Spring
*BIOL F371 or MSL F320	Principles of Ecology (4 credits)/ Aquatic Ecology (3 credits)	Major, UD	4	Fall
MSL F303	Data Analysis and Writing for Aquatic Sciences-- or ENGL F314 with a petition	Major, UD	3	Fall
		FISH/MSL concentration course 3	3	
Total:			17	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
NRM F303X	Environmental Ethics and Actions	Recommend: Ethics-Degree, UD	3	Spring
BIOL F260	Principles of Genetics	Major	4	Fall & Spring
		Upper Division FISH/MSL concentration course 1	3	
		Upper Division FISH/MSL concentration course 2	4	
		Upper Division FISH/MSL concentration course 3	3	
Total:			17	
Third Yr Total Projected:			**34**	

FOURTH Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
ANS F161X	Introduction to Alaska Native Performance	Recommend: Art GER, Alaska Native-themed-Degree	3	every semester
		Additional A, H, S GER	3	Fall
*STAT F401 or STAT F402	*Regression and Analysis of Variance (4 credits)/ Scientific Sampling (3 credits)	Major, UD	4	Fall/ Fall & Spring

		Upper Division FISH/MSL concentration course 4	4	
		Upper Division FISH/MSL concentration course 5	3	
Total:			17	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
FISH F487 or FISH F498 & FISH F499 or MSL F481 or MSL F482 or MSL F499	Fisheries Management/ Senior Thesis Proposal and Fisheries Senior Thesis/ The Oceans and Global Change (offered in fall)/ Human Impacts to the Marine Biosphere/ Senior Thesis	Concentration, capstone, UD	3	Spring
		Upper Division FISH/MSL concentration course 6	3	
		Upper Division FISH/MSL concentration course 7	3	
		Upper Division FISH/MSL concentration course 8	3	
Total:			12	
Fourth Yr Total Projected:			**29**	

Total of Four Years Projected:	**123**

Concentration: Complete 38 credits of FISH and/or MSL courses (of which at least 24 credits must be upper-division)

*= #1 department recommended program course

Roadmap to Graduation- 4-year Plan
Program Name: Bachelor of Sciences, Fisheries and Marine Sciences
Concentration: Fisheries Science
Unit: College of Fisheries and Ocean Sciences
Catalogs: 2021-2022, 2022-2023

FIRST Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
WRTG F111X	Writing Across Contexts	Communication GER 1	3	Fall & Spring
BIOL F115X	Fundamentals of Biology I	N GER 1, prereq. For BIOL F260, BIOL F371, MSL F320 (major)	4	Fall & Spring
CHEM 105X	General Chemistry I	N degree requirement, prereq. For BIOL F260 (major)	4	every semester
FISH F102 or MSL F102	Fact or Fishin': Case Studies in Fisheries and Marine Sciences	Major, Seminar, prereq. For FISH F103 (major)	1	Fall
FISH F110	Fish and Fisheries in a Changing World	Major, prereq. FISH F103 (major), FISH F288 and FISH F315 (concentration)	3	Fall
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
BIOL F116X	Fundamentals of Biology II	N GER 2, prereq. For MSL F320 (major)	4	Fall & Spring
*MATH F230X or MATH F251X	Essential Calculus with Applications (3 credits)/ Calculus I (4 credits)	M GER 1, prereq. for MSL F211 (major)	3	Fall & Spring
CHEM F106X	General Chemistry II	N degree requirement	4	every semester
LS F101X	Library Information and Research	Library & Information Research-Degree, prereq. For BIOL F260 (major)	1	every semester
FISH F103	The Harvest of the Sea	Major	2	Spring
Total:			14	
First Year Total Projected:			**29**	

SECOND Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
COJO F141X	Fundamentals of Oral Communication: Public Context	Recommend: Communication GER 2, prereq. for FISH F487 (major) and FISH F411 (concentration)	3	every semester
STAT F200X	Elementary Statistics	M degree requirement, prereq. for MSL F303, STAT F401/STAT F402 (major), FISH F315 and FISH F487	3	Fall & Spring
*ECON F235X or ECON F101X	*Introduction to Natural Resource Economics/ Principles of Microeconomics	S GER 1	3	Fall/ every
MSL F211	Introduction to Marine Science I	Major, prereq. for MSL F212 (major)	3	Fall
FISH F261	Introduction to Fisheries Utilization	Concentration, instructor prereq. override required	3	Fall
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
		H GER 1	3	
WRTG 213X	Writing and the Sciences	Recommend: Communication GER 3	3	Fall & Spring
*PHYS F115 or PHYS F211X or PHYS F123X	*Physical Sciences/ General Physics I/ College Physics I	Major, N degree requirement	4	Fall/ Spring/ Fall & Spring
MSL F212	Introduction to Marine Science II	Major, prereq. for MSL F303 (major)	3	Spring
FISH F288	Fish and Fisheries of Alaska	Recommend: prereq. For FISH F487 and FISH F315 (concentration), Concentration	3	Spring
Total:			16	

SUMMER				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
FISH F490	Experiential Learning: Fisheries and Marine Sciences Internship	Major, UD	1	every semester (typically summer)
Total:			1	
Second Year Total Projected:			**32**	

THIRD Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
ANTH F211X or PS F201 or PS F221 or SOC F201X		Recommend: Additional A, H, S GER; prereq. For FISH F411 (concentration)	3	
BIOL F371 or MSL F320	Principles of Ecology (4 credits)/ Aquatic Ecology (3 credits)	Major, prereq. For FISH F414, UD	4	Fall
MSL F303	Data Analysis and Writing for Aquatic Sciences	Major, UD	3	Fall
FISH F425 or FISH F426 or FISH F428 or FISH F433	Fish Ecology/ Behavioral Ecology of Fishes/ Physiological Ecology of Fishes/ Pacific Salmon Life Histories	Concentration, UD	3	Fall/ Spring
		Upper Division List B concentration course 1	3	
Total:			16	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
NRM F303X	Environmental Ethics and Actions	Recommend: Ethics-Degree, UD	3	Spring
BIOL F260	Principles of Genetics	Major	4	Fall & Spring
*FISH F427 or BIOL F427	Ichthyology	Concentration, N Degree, UD	4	Fall & Spring
		Upper Division List B concentration course 2	3	
Total:			14	

SUMMER				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
FISH F315 or FISH F414	Freshwater Fisheries Techniques/ Field Methods in Marine Ecology and Fisheries	Concentration, UD	3	Summer
Total:			3	
Third Year Total Projected:			**33**	

FOURTH Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
		S GER 2	3	
ANS F161X	Introduction to Alaska Native Performance	Recommend: Art GER, Alaska Native-themed-Degree	3	every semester
*STAT F401 or STAT F402	Regression and Analysis of Variance (4 credits)/ Scientific Sampling (3 credits)	Major, UD	4	Fall/ Fall & Spring
FISH F411	Human Dimensions of Environmental Systems	Concentration, UD	3	Fall
		Upper Division List B concentration course 3	3	
Total:			16	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
FISH F487 or FISH F498 & FISH F499	Fisheries Management/ Senior Thesis Proposal and Fisheries Senior Thesis	Concentration, capstone, UD	3	Spring
		List A concentration course	4	
		Upper Division List B concentration course 4	3	
		Upper Division List B concentration course 5	3	
Total:			13	
Fourth Year Total Projected:			**29**	

Total of Four Years Projected:	**123**

Course List A--Concentration: Complete 4 credits of electives from chemistry, geology or physics.
Course List B--Concentration: Complete 15 credits of electives from fisheries, biology, marine sciences and limnology or natural resource management (of which at least 9 credits must be upper-division).

*= #1 department recommended program course

Roadmap to Graduation- 4-year Plan
Program Name: Bachelor of Sciences, Fisheries and Marine Sciences
Concentration: Marine Biology
Unit: College of Fisheries and Ocean Sciences
Catalogs: 2022-2023

FIRST Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
WRTG F111X	Writing Across Contexts	Communication GER 1	3	Fall & Spring
BIOL F115X	Fundamentals of Biology I	N GER 1, prereq. For BIOL F260, BIOL	4	Fall & Spring
CHEM 105X	General Chemistry I	N degree requirement, prereq for	4	every semester
FISH F102 or MSL F102	Fact or Fishin': Case Studies in Fisheries and Marine	Major, Seminar, prereq. For FISH	1	Fall
FISH F110	Fish and Fisheries in a Changing World	Major, prereq. FISH F103 (major)	3	Fall
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
BIOL F116X	Fundamentals of Biology II	N GER 2, prereq. For BIOL F260, F371,	4	Fall & Spring
*MATH F230X or MATH	Essential Calculus with Applications (3 credits)/ Calculus	M GER 1, prereq. for MSL F211	3	Fall & Spring
CHEM F106X	General Chemistry II	N degree requirement, Prereq. for	4	every semester
LS F101X	Library Information and Research	Library & Information Research-	1	every semester
FISH F103	The Harvest of the Sea	Major, prereq. for MSL F219	2	Spring
Total:			14	
First Year Total Projected:			**29**	

SECOND Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
COJO F141X	Fundamentals of Oral Communication: Public Context	Recommend: Communication GER 2	3	every semester
WRTG 213X	Writing and the Sciences	Recommend: Communication GER 3	3	Fall & Spring
STAT F200X	Elementary Statistics	M degree requirement, prereq. for	3	Fall & Spring
*ECON F235X or ECON	*Introduction to Natural Resource Economics/	S GER 1	3	Fall/ every
MSL F211	Introduction to Marine Science I	Major, prereq. for MSL F212, MSL	3	Fall
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
*PHYS F115 or PHYS	*Physical Sciences/ General Physics I/ College Physics I	Major, N degree requirement	4	Fall/ Spring/ Fall
MSL F212	Introduction to Marine Science II	Major, prereq. for MSL F303, MSL	3	Spring
MSL F219	Marine Mammals of the World	Concentration	2	Spring
*MSL F220 or MSL F421	*Scientific Diving/ Nearshore Ecology Field Course/	Concentration	2	Spring/Summer
MSL F317	Introduction to Marine Mammal Biology	Recommend: Concentration course	3	
Total:			14	

SUMMER				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
FISH F490	Experiential Learning: Fisheries and Marine Sciences	Major, UD	1	every semester
Total:			1	
Second Year Total Projected:			**30**	

THIRD Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
		H GER 1	3	
BIOL F371 or MSL F320	Principles of Ecology (4 credits)/ Aquatic Ecology (3	Major, prereq. for MSL F410	4	Fall
MSL F412	Early Life Histories of Marine Invertebrates	Recommend: Concentration course	3	Fall Odd-
MSL F431	Polar Marine Science	Recommend: Concentration course	3	Fall Odd-
MSL F449	Biological Oceanography	Recommend: Concentration course	3	Fall
Total:			16	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
		S GER 2	3	
		Additional A, H, S GER	3	
BIOL F260	Principles of Genetics	Major	4	Fall & Spring
FISH F427	Ichthyology	Recommend: Concentration course	4	Fall & Spring
MSL F455	Phytoplankton and Marine Microbes	Recommend: Concentration course	3	Spring Even-
Total:			17	
Third Year Total Projected:			**33**	

FOURTH Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
MSL F303	Data Analysis and Writing for Aquatic Sciences	Major, UD	3	Fall
*CHEM F321 or CHEM	*Organic Chemistry I/ General Biochemistry:	Concentration, UD	4	Fall
MSL F410	Marine Bird Ecology and Conservation	Recommend: Concentration course	3	Fall Even-
MSL F415	Physiology of Marine Organisms	Recommend: Concentration course	3	Fall
MSL F453	Zooplankton Ecology	Recommend: Concentration course	3	Fall Even-
Total:			16	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
ANS F161X	Introduction to Alaska Native Performance	Recommend: Art GER, Alaska Native-	3	every semester
NRM F303X	Environmental Ethics and Actions	Recommend: Ethics-Degree, UD	3	Spring
*STAT F401 or STAT	Regression and Analysis of Variance (4 credits)/	Major, prereq. for STAT F461, UD	4	Fall/ Fall &
*MSL F482 or MSL F499	*Human Impacts to the Marine Biosphere/ Senior	Concentration, capstone, UD	3	Spring
MSL F467	Ecology and Physiology of Marine Microalgae	Recommend: Concentration course	3	Spring Odd-
Total:			16	
Fourth Year Total Projected:			**32**	

Total of Four Years Projected:	**124**

Concentration: Complete three of the following courses from list A: FISH F427, MSL F306, MSL F317, MSL F410, MSL F453, MSL F455, MSL F467
Concentration: Complete an additional 22 credits from list B: FISH F427, FISH F435, MSL F220, MSL F306, MSL F317, MSL F410, MSL F412, MSL

*= #1 department recommended program course

Roadmap to Graduation- 4-year Plan
Program Name: Bachelor of Sciences, Fisheries and Marine Sciences
Concentration: Oceanography
Unit: College of Fisheries and Ocean Sciences
Catalogs: 2022-2023

FIRST Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
WRTG F111X	Writing Across Contexts	Communication GER 1	3	Fall & Spring
BIOL F115X	Fundamentals of Biology I	N GER 1, prereq. For BIOL F260, BIOL	4	Fall & Spring
CHEM 105X	General Chemistry I	N degree requirement, prereq for	4	every semester
FISH F102 or MSL F102	Fact or Fishin': Case Studies in Fisheries and Marine	Major, Seminar, prereq. For FISH	1	Fall
FISH F110	Fish and Fisheries in a Changing World	Major, prereq. FISH F103 (major)	3	Fall
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
COJO F141X	Fundamentals of Oral Communication: Public Context	Recommend: Communication GER 2,	3	every semester
BIOL F116X	Fundamentals of Biology II	N GER 2, prereq. For MSL F320	4	Fall & Spring
*MATH F230X or MATH	Essential Calculus with Applications (3 credits)/ Calculus	M GER 1, prereq. for MSL F211	3	Fall & Spring
CHEM F106X	General Chemistry II	N degree requirement	4	every semester
FISH F103	The Harvest of the Sea	Major	2	Spring
Total:			16	
First Year Total Projected:			**31**	

SECOND Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
*ECON F235X or ECON	Introduction to Natural Resource Economics/ Principles	S GER 1	3	Fall/ every
LS F101X	Library Information and Research	Library & Information Research-	1	every semester
STAT F200X	Elementary Statistics	M degree requirement, prereq. for	3	Fall & Spring
MSL F211	Introduction to Marine Science I	Major, prereq. for MSL F212 (major)	3	Fall
*GEOS F111X or GEOS	Earth and Environment: Elements of Physical	Concentration	4	Fall
Total:			14	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
WRTG 213X	Writing and the Sciences	Recommend: Communication GER 3	3	Fall & Spring
		H GER 1	3	
		S GER 2	3	
*PHYS F115 or PHYS	*Physical Sciences/ General Physics I/ College Physics I	Major, N degree requirement	4	Fall/ Spring/ Fall
MSL F212	Introduction to Marine Science II	Major, prereq. for MSL F303 (major)	3	Spring
Total:			16	

SUMMER				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
FISH F490	Experiential Learning: Fisheries and Marine Sciences	Major, UD	1	every semester
Total:			1	
Second Year Total Projected:			**31**	

THIRD Academic Year

FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
		Additional A, H, S GER	3	
ANS F161X	Introduction to Alaska Native Performance	Recommend: Art GER, Alaska Native-	3	every semester
BIOL F371 or MSL F320	Principles of Ecology (4 credits)/ Aquatic Ecology (3	Major, UD	4	Fall
MSL F303	Data Analysis and Writing for Aquatic Sciences	Major, UD	3	Fall
MSL F315	Marine Geological Drama and Undersea Catastrophes	Concentration, UD	3	Fall
Total:			16	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
NRM F303X	Environmental Ethics and Actions	Recommend:Ethics-Degree, UD	3	Spring
BIOL F260	Principles of Genetics	Major	4	Fall & Spring
MSL F461	Chemical Oceanography	Concentration, UD	3	Spring
MSL F455	Phytoplankton and Marine Microbes	Recommend: concentration course	3	Spring Even-
MSL F463	Chemical Coastal Processes	Recommend: concentration course	3	Spring Even-
Total:			16	
Third Year Total Projected:			**32**	

FOURTH Academic Year				
FALL				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
MSL F419	Concepts in Physical Oceanography	Concentration, UD	3	Fall even-
MSL F425	Subarctic Oceanography Field Course	Concentration, UD	3	Fall
MSL F449	Biological Oceanography	Concentration, prereq. for MSL F453,	3	Fall
*MSL F481 or MSL F499	*The Oceans and Global Change (offered in fall)/ Senior	Concentration, capstone, UD	3	Fall/ every
MSL F453	Zooplankton Ecology	Recommend: concentration course	3	Fall even-
Total:			15	

SPRING				
Course #	**Course Name**	**Requirement/Recommendation**	**Cr Hrs**	**Frequency**
*STAT F401 or STAT	Regression and Analysis of Variance (4 credits)/	Major, UD	4	Fall/ Fall &
		FISH, BIOL, MSL, geology, CHEM,	3	
		Upper Division FISH, BIOL, MSL,	3	
		Upper Division FISH, BIOL, MSL,	3	
		Upper Division FISH, BIOL, MSL,	3	
Total:			16	
Fourth Year Total Projected:			**31**	

Total of Four Years Projected:	**125**

Concentration: Complete 7 credits from the following list A: MSL F453, MSL F455, MSL F459, MSL F463
Concentration: Complete 12 credits of electives from marine sciences and limnology, fisheries, biology, geology, chemistry or physics (of which at least 9 credits must be upper-division).

*= #1 department recommended program course