

# OCEAN SCIENCES

# COMBINED HONOURS PRIMARY (A) SUBJECT

NAME & BANNER # \_\_\_\_\_

Honours is declared in the third year of study, at which a "B+" average (3.3) must be attained in the 2000, 3000, and 4000 level courses listed below. Use this worksheet to map out your Ocean Sciences requirements. You're encouraged to take courses outside of oceanography in another area of interest to reach 40 total courses.

## 1. FOUNDATIONS

	COURSE	TERM	COURSE	TERM
1A. Physics	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
1B. Calculus	<input type="radio"/> _____	/ _____	<input type="radio"/> MATH 1010	/ _____
1C. Stats	<input type="radio"/> MATH 1060	/ _____		
1D. Science Foundation 1	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
1E. Science Foundation 2	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____

## 2. OCEAN CORE

2A. Blue Planet	<input type="radio"/> DCEA 2001	/ _____	<input type="radio"/> DCEA 2002	/ _____
2B. Tools & Concepts	<input type="radio"/> DCEA 2020	/ _____	<input type="radio"/> DCEA 2021	/ _____
2C. Intro to Field Oceanography	<input type="radio"/> DCEA 3003	/ _____		

## 3. OCEAN AREAS

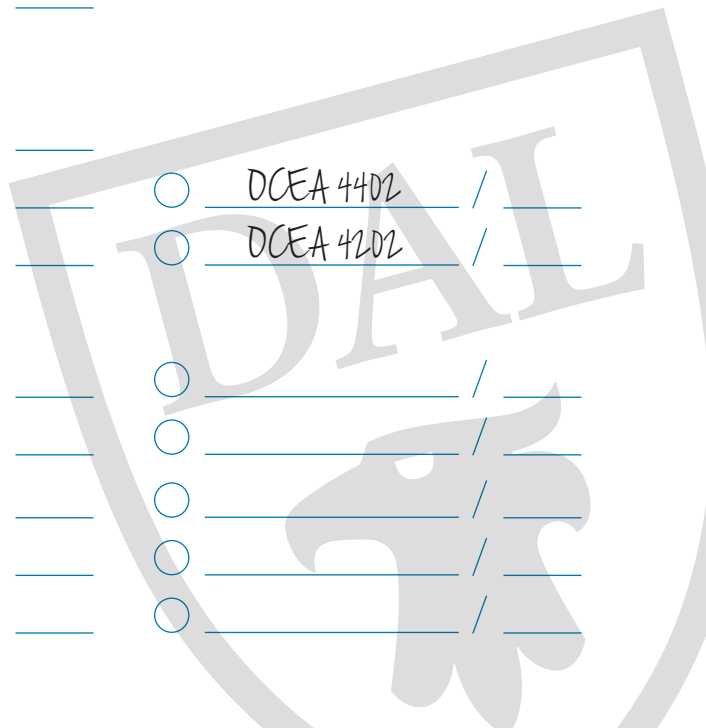
3A. Physical Oceanography	<input type="radio"/> _____	/ _____		
3B. Ocean Area Required Courses	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
3C. Additional Ocean Area Courses	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
	<input type="radio"/> _____	/ _____		

## 4. OCEAN CAPSTONE

4A. Oceans and Global Change	<input type="radio"/> DCEA 4000	/ _____		
4B. Marine Management	<input type="radio"/> DCEA 4401	/ _____	<input type="radio"/> DCEA 4402	/ _____
4C. Honours Research	<input type="radio"/> DCEA 4201	/ _____	<input type="radio"/> DCEA 4202	/ _____

## 5. CAS GENERAL REQUIREMENTS

5A. Writing course	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
5B. Mathematics	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
5C. Languages and Humanities	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
5D. Social Sciences	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____
5E. Life and Physical Sciences	<input type="radio"/> _____	/ _____	<input type="radio"/> _____	/ _____





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## REQUIREMENTS

### 1. FOUNDATIONS (*DISP students should consult an advisor for equivalencies*)

- 1A. **Either** PHYC 1190 & PHYC 1290 – Intro to Physics **or** PHYC 1310 & PHYC 1320 – Physics In and Around You
- 1B. MATH 1000 & MATH 1010 – Differential and Integral Calculus I & II (completion of MATH 1215 – Life Science Calculus, with a grade of “B” or better, can be used in place of MATH 1000)
- 1C. MATH/STAT 1060 – Intro to Statistics
- 1D. **One** of the following introductory course sequences:
- BIOL 1010 & BIOL 1011 – Principles of Biology I & II
  - CHEM 1011 & CHEM 1012 – Concepts in Chemistry I & II
  - EARTH 1080 & EARTH 1090 – Geology I & II
- 1E. Another **one** of the introductory course sequences listed in 1D

### 2. OCEAN CORE

- 2A. OCEA 2001 & OCEA 2002 – Blue Planet I & II with a minimum grade of “B”
- 2B. OCEA 2020 & OCEA 2021 – Tools & Concepts in Ocean Sciences I & II with a minimum grade of “B”
- 2C. OCEA 3003 – Intro to Field Oceanography (summer term only; apply through SEASIDE)

### 3. OCEAN AREAS (*see reverse*)

- 3A. **Either** OCEA 3001 – Intro to Physical Oceanography **or** OCEA 4120 – Physical Oceanography
- 3B. **Two** of the following courses:
- OCEA 3002 – Intro to Chemical Oceanography
  - OCEA 4110 – Geological Oceanography
  - OCEA 4140 – Intro to Biological Oceanography
- 3C. **Three** additional courses from any Ocean Area(s) not already chosen in 3A or 3B

### 4. OCEAN CAPSTONE

- 4A. OCEA 4000 – Oceans and Global Change
- 4B. OCEA 4401 & OCEA 4402 – Marine Management I & II
- 4C. OCEA 4201 & OCEA 4202 – Honours Research I & II

### 5. COLLEGE OF ARTS & SCIENCE (CAS) GENERAL REQUIREMENTS

- 5A. Any **two** approved writing courses. Consider:
- OCEA 1001 & OCEA 1002 – Conversations with Ocean Scientists I & II
- 5B. MATH courses taken in **1B** fulfill this requirement
- 5C. Many courses fulfill this **two** course requirement. Consider:
- HIST 3073/OCEA 4331 – History of Marine Sciences
  - PHIL 1050 – Ethics in Science
  - *\*Courses chosen in 5C can't be used for 5D*
- 5D. Many courses fulfill this **two** course requirement. Consider:
- HIST 3073/OCEA 4331 – History of Marine Sciences
  - *\*Courses chosen in 5D can't be used for 5C*
- 5E. Any **two** PHYS, BIOL, CHEM, EARTH, or OCEA courses fulfill this subject grouping requirement



## biological

- OCEA 3685 – Gulf of Eilat Ecosystem
- OCEA 4140 – Biological Oceanography\*
- OCEA 4160 – Fisheries Oceanography
- OCEA 4230 – Biology of Phytoplankton
- OCEA 4330 – Benthic Ecology
- OCEA 4335 – Environmental Impacts in Marine Ecosystems
- OCEA 4370 – Deep Sea Biology
- OCEA 4380 – Marine Modelling
- OCEA 4665 – Hacking the Blue Planet

## chemical

- OCEA 3002 – Intro to Chemical Oceanography\*
- OCEA 3420 – Geochemistry of Aquatic Environments
- OCEA 4130 – Chemical Oceanography
- OCEA 4290 – Advanced Chemical Oceanography
- OCEA 4595 – Atmospheric Chemistry

### OCEAN SCIENCE AREAS

## geological

- OCEA 3004 – Last Billion Years
- OCEA 3420 – Geochemistry of Aquatic Environments
- OCEA 4110 – Geological Oceanography\*
- OCEA 4115 – Micropaleontology and Global Change
- OCEA 4470 – Introduction to Seismic Imaging
- OCEA 4480 – Advanced Seismic Imaging

## physical

- OCEA 3001 – Intro to Physical Oceanography\*
- OCEA 4120 – Physical Oceanography\*
- OCEA 4210 – Time Series Analysis in Oceanography and Meteorology
- OCEA 4220 – Numerical Modelling of Atmospheres and Oceans
- OCEA 4221 – Ocean Dynamics
- OCEA 4222 – Estuary, Coast and Shelf Dynamics
- OCEA 4250 – Acoustical Oceanography
- OCEA 4311 – Fluid Dynamics I
- OCEA 4411 – Atmospheric Dynamics I
- OCEA 4412 – Atmospheric Dynamics II
- OCEA 4505 – Atmospheric Physics
- OCEA 4520 – Intro to Atmospheric Science
- OCEA 4541 – Synoptic Meteorology I
- OCEA 4550 – Synoptic Meteorology II

**CHECK ACADEMIC TIMETABLE FOR INFORMATION ON WHEN COURSES ARE OFFERED**

\* denotes required course for that Area – either OCEA 3001 or OCEA 4120 are required for physical oceanography



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