

# Bachelor of Science in Natural Science, Applied Mathematics

The goal of academic advising is to further enhance the educational mission of the university, and create quality, accessible advising partnerships with all students in a positive environment that supports student success. This advising sheet is for tracking purposes toward degree completion and is subject to change. Students also may track their academic progress via STAR Degree Check through [www.star.hawaii.edu](http://www.star.hawaii.edu). Academic Advising appointments may be scheduled by calling 808-689-2689 or toll-free from neighbor islands at 866-299-8656.

## Graduation Requirements (see the 2019-2020 catalog for any additional graduation requirements):

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|--|---|--|
| <input type="checkbox"/> 45 Upper Division Credits Minimum | <input type="checkbox"/> 3 Upper Division Writing Intensive Courses | <input type="checkbox"/> 2.0 UHWO GPA          |
| <input type="checkbox"/> 120 Total Credits Minimum         | <input type="checkbox"/> Focus Requirements (OC, HAP, ETH)          | <input type="checkbox"/> 2.0 CONCENTRATION GPA |
| <input type="checkbox"/> 30 UHWO Credits                   |   |  |

## General Education Requirements: 31 credits

Credits	Course Alpha / Number / Title
3	Foundations Written Communications (FW) ENG 100 Composition I
3	Foundations of Quantitative Reasoning (FQ) MATH 241 Calculus I
6	Foundations Global and Multicultural Perspectives (FG): 6 credits from two <b>different</b> groups (A, B, C): *Group A: Primarily before 1500 CE (e.g.; HIST 151 or ANTH 151) *Group B: Primarily after 1500 CE (e.g.; HIST 152 or ANTH 152) *Group C: Pre-history to present
6	Diversification Arts, Humanities & Literature (DA, DH, DL): 6 credits from two different areas ( <i>recommended HAP and OC Focus</i> )
3	Diversification Social Sciences (DS): 6 credits from two different areas
3	Diversification Social Sciences (DS): Different area from above.
3	Diversification Natural Sciences (DB, DP, DY): 3 credits from the biological sciences (DB): <i>BIOL 171</i>
3	3 credits from the physical sciences (DP): <i>CHEM 161</i>
1	1 credit of laboratory (DY): <i>CHEM 161L</i>

## Writing Skills Requirement: 3 credits

Credits	Course Alpha / Number / Title
3	ENG 200 Composition II or ENG 209 Business Writing

## Natural Sciences Core Requirements: 38 - 48 credits

*\*Up to 10 credits in the Lower Division Requirement can also fulfill General Education Requirements*

Credits	Course Alpha / Number / Title
0-4*	CHEM 161/ 161 L General Chemistry I and Lab ( <i>can also satisfy general ed DP/DY above</i> ) Prerequisite: Placement into ENG 100 or concurrent enrollment in ENG 100T and MATH 103 with a C or higher or concurrent enrollment in MATH 241
4	CHEM 162/ 162 L General Chemistry II and Lab Prerequisite: CHEM 161 with a C or higher
1-4*	MATH 241 Calculus I Prerequisite: Grade of "C" or better in MATH 140 or equivalent; or placement into MATH 241
4	MATH 242 Calculus II Prerequisite: Grade of "C" or better in MATH 241 or equivalent; or placement into MATH 242
4	PHYS 151/ 151L College Physics I and Lab or PHYS 170/ 170 L General Physics I and Lab Prerequisite: MATH 140 with a C or better, or Math 241 with a C or better or concurrent with Math 241
4	PHYS 152/ 152 L College Physics II and Lab or PHYS 272/ 272 L General Physics II and Lab Prerequisite: PHYS 151/151L with a C or better, or PHYS 170/170L with a C or better and Math 242 with a C or better or concurrent with Math 242
1-4*	BIOL 171/ 171L Introduction to Biology I and Lab ( <i>can also satisfy general ed DB above</i> ) Prerequisite: Completion of or concurrent enrollment in either CHEM 151 or 161
4	BIOL 172/ 172L Introduction to Biology II and Lab Prerequisite: BIOL 171/171L

Credits	Course Alpha / Number / Title
3	ICS 101 Digital Tools for the Information World -OR- ICS 111 Introduction to Computer Science Prerequisite: ICS 101 or equivalent, all with a grade of C or better, or consent of instructor
3	<b>Select one course from the following:</b> HLTH 204 Introduction to Native Hawaiian & Indigenous Health and Healing HLTH 205 Hawaiian Ways of Healing NSCI 298B Interdisciplinary Indigenous Sciences and Health
1	NSCI 198B Transdisciplinary Introduction to Laboratory Methods
2	NSCI 298C Transdisciplinary Introduction to Research Methods
4	MATH 304 Mathematical Modeling Prerequisite: Math 242
3	NSCI 498B Interdisciplinary Seminar

### Applied Mathematics Concentration Requirements: 28 credits

Credits	Course Alpha / Number / Title
4	MATH 245 Multivariable Calculus Prerequisite: MATH 242
3	MATH 307 Linear Algebra and Ordinary Differential Equations Prerequisite: MATH 243 or concurrent enrollment; or instructor consent
3	MATH 321 Introduction to Advanced Mathematics Prerequisite: ENG 200 and MATH 243 or concurrent; or equivalent coursework within the past two years; or instructor consent.
3	MATH 327 Origins of Mathematics Prerequisite: MATH 242 or equivalent coursework within the past two years; or instructor consent. MATH 311 or MATH 321 recommended.
3	MATH 331 Introduction to Real Analysis Prerequisite: MATH 242 and concurrent or completion of MATH 321; or instructor consent
3	MATH 361 Applied Probability Theory Prerequisite: MATH 242; or consent of instructor
3	MATH 498C Methods in Applied Mathematics Prerequisite: MATH 242 or equivalent. MATH 311 or MATH 321 recommended
3	MATH 405 Ordinary Differential Equations and Stability Theory Prerequisite: MATH 302 or MATH 307 or 311
3	MATH 461 Applied Statistics Prerequisite: MATH 361; or consent of instructor

### Applied Mathematics Electives: 9 credits

MATH 301 Intro to Discrete Mathematics  
MATH 351 Foundation of Euclidean Geometry  
MATH 407 Numerical Analysis  
MATH 411 Linear Algebra  
MATH 412 Intro to Abstract Algebra I

MATH 413 Intro to Abstract Algebra II  
MATH 431 Advanced Calculus  
MATH 444 Complex Analysis  
MATH 496 Independent Research

Credits	Course Alpha / Number / Title
3	
3	
3	

### Capstone Requirement: 3 credits

Credits	Course Alpha / Number / Title
3	NSCI 486M Senior Project or NSCI 490M Senior Practicum

**Elective Requirements: 2-8 credits**

Check with your College Success Advisor to confirm how many elective credits needed

Credits	Course Alpha / Number / Title
2	<i>Upper Division 300-400 level</i>
3	
3	

**NOTES:** The faculty contacts for the Applied Mathematics concentration are:

Dr. Michael Furuto; Email: mfuruto@hawaii.edu; Phone: (808) 689-2358

Dr. Esther Wideasih; Email: wideasih@hawaii.edu; Phone: (808) 689-2388

Dr. Kamuela Yong; Email: kamuelay@hawaii.edu; Phone: (808) 689-2498

Dr. Veny Liu ; Email: venyliu@hawaii.edu; Phone: (808) 689-2383