KEAN UNIVERSITY –COLLEGE OF SCIENCE, MATHEMATICS AND TECHNOLOGY

(70301) B.S. IN BIOLOGY, ENVIRONMENTAL BIOLOGY OPTION 120 S.H.

Minimum GPA Required for Declaration: 2.5

Minimum GPA Required for Major: 2.5

Overall Minimum GPA Required for Graduation: 2.5

EFFECTIVE DATE: Fall 2021

GENERAL EDUCATION 32 Semester Hours		ACADEMIC MAJOR*** 56 Semester Hours	
Foundation Requirements:[1] 13 S.H.		**Major Required Courses: 32-35 S.H.**	
GE 1000 Transition to Kean **–or–** GE 3000 Transfer Transitions[2]	1	ENV 1000 Introduction to Environmental Science	3
ENG 1030 Composition[3]	3	ENV 2020 Evolutionary Biology	4
**MATH 1054 Precalculus[4]	3	ENV 2100 Ecosystem Science	4
COMM 1402 Speech Communication	3	ENV 3051 Field Biology: Terrestrial Systems **-or-** ENV 4605 Methods in Marine Research	4
GE 2024 Research & Technology	3	ENV 3100 Principles of Environmental Soil Science	4
		ENV 3180 Principles of Environmental Organic Chemistry **-or-** CHEM 2581+2581L Principles of Organic Chemistry ‡	4
Disciplinary & Interdisciplinary Distribution Requirements 19 S.H.		ENV 3201 Biodiversity Assessment	4
		ENV 4210 Conservation Biology	4
***Humanities* 6 S.H. (from different areas)**		ENV 4961,2,3,4 Independent Study in SESS (1-4 credits)	1-4
*ENG 2403 World Literature	3		
Take one "GE Approved" course from one area below:			
Fine Arts/Art History	3		
Philosophy or Religion	3	**PROGRAM FOCUS-RELATED ELECTIVES 12-16 S.H.** **To be selected with advisement from approved program list maintained in the School of Environmental and Sustainability Sciences and in consultation with the Program Coordinator. At least 50% must be at the 3000-4000 level. Maximum of 12 S.H. of ENV courses count toward degree.**	
Foreign Languages (Must take I and II for credit)	3		
Music or Theatre	3		
Interdisciplinary	3		
		Major Elective Courses: 12-16 S.H.	
***Social Sciences* 6 S.H. (from different areas)**		Optional: ES 1996 Freshman Research	1-2
*HIST 1062 Worlds of History	3	Optional: ES 3171-3173 Internship	1-3
Take one "GE Approved" course from one area below:			
Psychology	3		
Economics **-or-** ES 1010-World Geography	3		
Political Science	3	****Major Capstone Course***: 3 S.H.**	
Sociology or Anthropology	3	SUST 4300 Independent Practicum in Sustainability (WE)	3
Interdisciplinary	3		
***Science and Mathematics* 7 S.H.**		**FREE ELECTIVES 5-9 Semester Hours**	
MATH 1016 Statistics**	3	**at least 50% must be 3000/4000 level**	
CHEM 1083 Chemistry I****	4		
ADDITIONAL REQUIRED COURSES 32 Semester Hours		**Special Notes:**	
		[1]See pre-requisites and equivalencies (on page 2)	
BIO 1300 Biology I	4	[2]University requirement for all undergraduate students that must be satisfied in one of two ways: Complete GE 1000 (all freshmen and transfers entering with 0-29 credits) OR complete GE 3000 (transfers entering with 30 or more credits or more)	
BIO 1400 Biology II	4		
CHEM 1084 Chemistry II	4		
ES 3011 Data Analysis for Environment and Health	4	[3]ENG 1030 requires grade of C or higher	
MATH 2415 Calculus[1]	4	[4] Required by SESS; pre-req is MATH 1000 which may be used as a free elective by students needing to take MATH 1000 first	
PHYS 2091 General Physics I	4		
Take any two (2) of the below four (4) courses		*GE Distribution course required of all students	
BIO 2500 Principles of Botany	4	**Course required by Major	
BIO 3400 Zoology	4	***All Major courses require a grade of C or better	
BIO 3709 Genetics	4	****Must earn a C grade or better to advance to CHEM 1084	
PHYS 2092 General Physics II	4	‡ Students pursuing health, research, or veterinary fields should take CHEM 2581+2581L followed by CHEM 2582+2582L (Organic Chemistry II would count as Program Electives)	

PROGRAM REVISION DATE (11/5/20)
Degree shell revised. 2/19 (Registrar/VPAA/Senate/UCC/GE-120 mandate)

GENERAL EDUCATION AND UNIVERSITY REQUIREMENTS

GENERAL EDUCATION INFORMATION AND REQUIREMENTS

Testing and Placement
Incoming freshmen and transfer students may be placed in specific GE Foundations, Developmental or ESL courses as a result of testing prior to registration. Students may be exempt from testing due to SAT scores or prior college work.

Prerequisites and Equivalencies for GE Foundations Courses

GE 1000
Required of all freshmen & transfers entering with 0-29 credits
Prereq: None Equiv: ID 1001

GE 3000
Required of transfers entering with 30 credits or more Prereq: 30 credits and ENG 1030

ENG 1030
Prereq: Placement testing or exemption from placement testing
Equiv: ENG 1031/1032, ENG 1033/1034, ENG 1430, ENG 1620, ENG 1020, ENG 1400

MATH 1000 or 1010 or 1016 or 1030
Prereq: MATH 0901 if required by placement testing
Equiv of MATH 1000: MATH 1001/1002, MATH 1003/1004, MATH 1051

MATH 1044* or 1054
Prereq: MATH 0901 if required by placement testing and MATH 1000
***MATH 1044 is available as a Foundation option for CBPM students only**

COMM 1402
Prereq: CS 0412 if required by placement testing ENG 1031/1032 or ENG 1033/1034 if required by placement testing May be taken concurrently with ENG 1030
Equiv: COMM 1400

GE 2021- 2026 *Research and Technology* is offered as college-based course
GE 2021 College of BPM GE 2022 College of EDU
GE 2023 College of CLA GE 2024 College of NAHS & NJCSTM & NWGC
GE 2025 SFPA & Michael Graves College
GE 2026 Undecided Majors and other special populations
Prereqs: CS 0412 if required by placement testing
ENG 1030 or equivalent
COMM 1402
Equiv: GE 2020

GE Distribution Courses

Approved GE Distribution Courses

All courses taken under the General Education Disciplinary/Interdisciplinary Distribution requirements must be selected from the Approved General Education Distribution Course List.
These courses are designated as GEHU, GESS, and GESM.
GEHU Humanities GESS Social Sciences
GESM Science and Mathematics

Required GE Distribution Courses

ENG 2403 is a required Humanities Distribution course with an emphasis on diversity.
Prereq: CS 0412 if required by placement testing; ENG 1030 or equivalent
Equiv: ENG*2203

HIST 1062 is a required Social Sciences Distribution course. Prereq: None

Foreign Language Credit

The three credits for a foreign language that may satisfy the GE Disciplinary/Interdisciplinary Distribution Requirement are awarded only upon successful completion of the second of two semesters of study at the introductory or intermediate level. Credit for the first semester may be used as elective credit.

Additional Required Courses
MATH 2415: has a prereq of MATH 1054

GE/Major Capstone Course
A Capstone course is a major course that satisfies three credits of GE requirements.
Each major guide sheet will count three credits for the Capstone as either GE credits or major credits, but not both.

Optional Research and Internship Courses
Optional course that may be counted toward free electives.

WE-Writing Emphasis
Upon approval

UNIVERSITY REQUIREMENTS

GE 1000/3000 Requirement

All undergraduate students must satisfy this University requirement for graduation by successfully completing one of the following courses at Kean University: GE 1000 Transition to Kean (all freshmen and transfers entering with 0-29 credits) or GE 3000 Transfer Transitions (transfers entering with 30 credits or more).

Writing-Emphasis Requirement

All students are required to complete one "Writing- Emphasis" course. The "W-E" course must be within the major portion of your program. Consult your major program advisor for specific information.

B.S. IN ENVIRONMENTAL BIOLOGY APPROVED MAJOR-RELATED ELECTIVES*

***Subject to change as new courses are approved and old courses are eliminated. Independent Research, Independent Study, and/or Special Topics courses not listed, but will be approved on an individual basis if appropriate. Any combination of 12 semester hours may be selected to fulfill graduation requirements; however, students are strongly encouraged to select courses only after consultation with and approval of their advisor. At least 50% must be at the 3000-4000 level. Failure to do so may result in result in a less than optimal program experience.**

1000 level courses	S.H.		S.H.
ECO 1020: Principles of Economics I	3	PS 1010: Introduction to Politics: Elements of Politics	3
ES 1200: Introduction to Geology	4	PSY 1000: General Psychology	3
ENV 1300: Introduction to Meteorology	4	REC 1100: Introduction to the Recreation	3
ID 1350: Environmental Ethics	3		
2000 level courses[3]			
BIO 2500: Principles of Botany[1]	3	CHEM 2582L and 2582L: Organic Chemistry Lecture and Laboratory II ***	4
CHEM 2283: Quantitative Analysis**	4	SUST 2008: Introduction to Composting	4
CHEM 2491: Inorganic Chemistry**	3	ENV 2500: Biomimicry	4
3000 level courses[3]			
BIO 3000: Marine Biology	4	ES 3264: Invertebrate Paleontology	4
BIO 3060: Biology and Ecology of Birds	4	ES 3265: Geomorphology	4
BIO 3315: Microbiology*	3	ES 3360: Air Pollution	3
BIO 3315L: Microbiology Lab*	1	HIST 3852: History of Science	3
BIO 3400: Zoology: Form and Function[1]	4	PHIL 3800: Environmental Philosophy	3
BIO 3535: Field Botany	3	PSY 3420: Environmental Psychology	3
ENV 3201: Biodiversity	4	REC 3810: Recreation and the Environment	3
ENV 3230: Urban Ecology	4	SOC 3150: Urban Sociology	3
ENV 3250: Medicinal Botany	3	SOC 3420: Environment and Society	3
ENV 3380: Environmental Instrumentation	4	SUST 3100: Renewable Energy	3
ENV 3400: Environmental Oceanography	4	SUST 3200: Environmental Health and Safety for Sustainability	3
ENV 3600: Coral Reefs and Coastal Systems	4	SUST 3300: LEED Lab and AP Credential Preparation	3
ENV 3720: Entomology	4	SUST 3400: Intro to Environmental Engineering	4
ES 3000: Global Climate Change and Society	4	SUST 3600: Global Sustainability Development	3
ES 3210: GIS for Environment and Health	4		
4000 level courses[3]			
BIO 4415: Ichthyology	4	ENV 4605: Field Methods in Marine Research[1]	4
BIO 4615: Applied Ecology	4	ENV 4800: Environmental Toxicology and Human Health	4
BCHM 4415: Biochemistry****	3	ES 4200: Remote Sensing	4
BCHM 4415L: Biochemistry Lab*****	1	GBUS 4320: Global Business and Technology	3
ENV 4103L Environmental Hazards	4	SUST 4000 Technology for Sustainability	3
ENV 4710: Physiological Ecology	4	SUST 4110 Life Cycle Assessment	4
ENV 4435: Behavioral Ecology	3	SUST 4300 LEED and AP Prep	4
ENV 4600: Plant-Animal Interactions	4	SUST 4500: Air and Solid Pollution Control	4
ENV 4601: Marine Conservation	4		
ENV 4602: Marine Resource Management	3		
[1] This course will count as a program elective if it is not used to fulfill the Additional or Major Required Courses.		* Courses need to be taken together for both lab and lecture sections	
		** Require CHEM1084 as a pre-requisite course	
		*** Require CHEM2581 as a pre-requisite course	
		**** Require CHEM2582 as a pre-requisite course	