

Revised Guidesheet

KEAN UNIVERSITY – COLLEGE OF NATURAL, APPLIED & HEALTH SCIENCES

(76205) B.S. IN Earth Science (Option: ENVIRONMENTAL SCIENCE) 120 Cr

Minimum GPA Required for Declaration: 2.50

Minimum GPA required for Major: 2.50

Overall Minimum GPA Required for Graduation: 2.50

EFFECTIVE DATE: Fall 2019

GENERAL EDUCATION: 32 Semester Hours (S.H.)		ACADEMIC MAJOR REQUIREMENTS: 35 S.H.***	
Foundation Requirements 13 S.H.¹		ENV 1000 Introduction to Environmental Science	3
G.E. 1000 Transition to Kean or G.E. 3000 Transfer Transitions ²	1	ENV 2100 Ecosystem Science	4
ENG 1030 College Composition ³	3	ENV 3051 Field Biology: Terrestrial Systems OR ENV 4605 Methods in Marine Research	4
MATH 1054 Precalculus ⁴	3	ES 1101 Introduction to Earth and Geog. Syst.	4
COMM 1402 Speech Communication	3	ES 1300 Introduction to Meteorology	4
GE 2024 Research & Technology	3	ES 2101 Geo-Hydro System	4
		ES 2400 Introduction to Oceanography	4
Disciplinary & Interdisciplinary Distribution Requirements		ES 3010 Data Analysis and Modeling in Geoscience	4
Humanities: 6 S.H. (from different areas)		ES 3200 GIS in Geoscience	4
ENG 2403 World Literature* +	3		
Take one "GE Approved" course from one area below		PROGRAM FOCUS-RELATED ELECTIVES 15 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 and advisors toward their degree	
Fine Arts/Art History			
Foreign Languages (Must take I and II for credit)	3		
Interdisciplinary	3		
Music or Theatre	3	Optional: ES 1996 Research Initiative for First-Year Students ⁵	1
Philosophy or Religion	3		
Social Sciences: 6 S.H. (from different areas)		Optional ES 3171 or ES 3173 Environmental Internship	1-3
HIST 1062 Worlds of History *	3		
Take one "GE Approved" course from one area below			
ES 1010 World Geography or Economics	3		
Interdisciplinary	3		
Political Science	3	Major Capstone Course: 3 S.H. ***	
Psychology	3	SUST 4300 Independent Practicum in Sustainability Science (WE)	3
Sociology or Anthropology	3		
FREE ELECTIVES: 8 S.H.			
Science and Mathematics: 7 S.H.			
MATH 1016 Statistics ⁴	3		
CHEM 1083 Chemistry I ****	4		
Special Notes: ¹ See pre-requisites and equivalencies (on page 2) ² University requirement for graduation for all undergraduate students that must be satisfied in one of two ways: Complete GE1000 (all freshmen and transfers entering with 0-29 credits) OR complete GE 3000 (transfers entering with 30 credits or more) ³ ENG 1030 requires grade of C or higher 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 ⁵ May be taken twice for a total of 2 credits [*] GE Distribution course required of all students ^{***} All Major courses require a grade of C or better ^{****} Must earn a grade of C or better to advance to CHEM 1084 [†] Students may be required to take ENG 1025 Introduction to Composition as a prerequisite			
ADDITIONAL REQUIREMENTS: 27 S.H.			
BIO 1300 General Biology I	4		
BIO 1400 General Biology II	4		
CPS 1231 Fundamentals of Computer Science	4		
CHEM 1084 Chemistry II	4		
SUST 1000 Introduction to Sustainability Science	3		
MATH 2415 Calculus I	4		
PHYS 2091 General Physics I	4		
Revised: 5/6/19		TOTAL CREDITS:	

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.

Program-focus Related Electives

Should be chosen from the following list (at least half being at 3000 level and above)

ENVIRONMENTAL SCIENCE

ENV 3230 URBAN ECOLOGY
ENV 3240 LANDSCAPE ECOLOGY
ENV 3250 MEDICINAL BOTANY
ENV 3380 ENVIRONMENTAL INSTRUMENTATION
ENV 3400 ENVIRONMENTAL OCEANOGRAPHY
ENV 3600 CORAL REEFS & COASTAL SYSTEMS
ENV 3720 ENTOMOLOGY
ENV 4103 ENVIRONMENTAL HAZARDS
ENV 4435 BEHAVIORAL ECOLOGY
ENV 4600 PLANT-ANIMAL INTERACTIONS
ENV 4601 MARINE CONSERVATION
ENV 4605 FIELD METHODS IN MARINE RESEA
ENV 4710 PHYSIOLOGICAL ECOLOGY

EARTH SCIENCE

ES 1000 OBSERVING THE EARTH
ES 1101 INTRODUCTION TO EARTH AND
GEOGRAPHICAL SYSTEMS
ES 2101 GEO-HYDRO SYSTEMS
ES 2400 INTRODUCTION TO OCEANOGRAPHY
ES 3000 GLOBAL CLIMATE CHANGE AND SOCIETY
ES 3010 DATA ANALYSIS AND MODELING IN
GEOSCIENCE
ES 3200 GEOGRAPHIC INFO SYSTEMS IN
GEOSCIENCE
ES 3264 INVERTEBRATE PALEONTOLOGY
ES 3266 HYDROLOGY
ES 4200 REMOTE SENSING
ES 4980 ENVIRONMENTAL INTERNSHIP*

SUSTAINABILITY SCIENCE

SUST 1000 INTRO TO SUSTAINABILITY SCI
SUST 2008 INTRODUCTION TO COMPOSTING
SUST 2200 INTRODUCTION TO LAWS &
SUSTAINABILITY
SUST 2202 RELIGION AND SUSTAINABILITY
SUST 2203 INTERCULTURAL COMMUNICATION FOR
SUSTAINABILITY
SUST 3110 RENEWABLE ENERGY
SUST 3200 ENV HLTH & SFTY FOR SUSTAIN
SUST 3300 LEED LAB AND AP CREDENTIAL
PREPARATION
SUST 3400 INTRO TO ENVIRONMENTAL
ENGINEERING
SUST 3600 GLOBAL SUSTAINABLE DEVELOPMENT TL
SUST 4000 TECHNOLOGIES FOR SUSTAIN
SUST 4110 LIFE CYCLE ASSESSMENT
SUST 4400 WATER AND WASTEWATER TREATMENT
SUST 4500 AIR AND SOLID POLLUTION CONTROL

ENVIRONMENTAL ETHICS - INTERDISCIPLINARY

ID 1350 ENVIRONMENTAL ETHICS
COMM 4200 ENVIRONMENTAL COMMUNICATION
GBUS 4310 GLOBAL BUSINESS RESEARCH &
ANALYTICS
GBUS 4320 SUSTAINABLE GLOBAL BUS &
TECHNOLOGY
PHIL 2800 ENVIRONMENTAL PHILOSOPHY
PSY 3420 ENVIRONMENTAL PSYCHOLOGY

BIOLOGY

BIO 2305 FUNDAMENTAL OF MICROBIOLOGY
BIO 2403 HUMAN ANATOMY & PHYSIOLOGY I
BIO 2404 HUMAN ANATOMY & PHYSIOLOGY II
BIO 2500 PRINCIPLES OF BOTANY (*If not taken as part
of Additional Requirements)
BIO 2650 INTRO TO MARINE BIOLOGY
BIO 3000 MARINE BIOLOGY
BIO 3060 BIOLOGY AND ECOLOGY OF BIRDS
BIO 3100 MEDICAL TERMINOLOGY
BIO 3200 BIOLOGY OF FOOD IN HEALTH AND
DISEASE
BIO 3315 PRINCIPLES OF MICROBIOLOGY AND BIO
3315L PRINCIPLES OF MICROBIOLOGY LABORATORY
BIO 3317 INFECTIOUS PATHOGENS
BIO 3400 ZOOLOGY: FORM AND FUNCTION (*If not
taken as part of Additional Requirements)
BIO 3403 ANATOMY AND PHYSIOLOGY I
BIO 3404 ANATOMY AND PHYSIOLOGY II
BIO 3405 BASIC GROSS ANATOMY
BIO 3406 NEUROSCIENCE
BIO 3709 GENETICS (*If not taken as part of Additional
Requirements)
BIO 3535 FIELD BOTANY
BIO 4105 ESSENTIALS OF BIOCHEMISTRY
BIO 4225 CELL PHYSIOLOGY
BIO 4310 VIROLOGY
BIO 4316 IMMUNOLOGY AND BIO 4316L IMMUNOLOGY
LABORATORY
BIO 4615 APPLIED ECOLOGY
BIO 4700 MOLECULAR GENETICS
BIO 4704 MOLECULAR BIOLOGY OF GENES

CHEMISTRY

CHEM 2283 QUANTITATIVE ANALYSIS
CHEM 2491 INORGANIC CHEMISTRY
CHEM 2493 DESC. INORG CHEM LAB
CHEM 2581 ORGANIC CHEMISTRY I
CHEM 2582 ORGANIC CHEMISTRY II
CHEM 2584 ORGANIC CHEMISTRY LABORATORY AND
RECITATION II
CHEM 3190 MEDICINAL CHEMISTRY
CHEM 3284 INSTRUMENTAL METH ANALYSIS
CHEM 3381 PHYSICAL CHEMISTRY I
CHEM 3382 PHYSICAL CHEMISTRY II

Program-focus Related Electives

Should be chosen from the following list (at least half being at 3000 level and above)

CHEMISTRY -continued

CHEM 3383 PHYSICAL CHEM LAB/RECITATION I
CHEM 3384 PHYSICAL CHEM LAB/RECITATN II
CHEM 3581 BIOCHEMISTRY
CHEM 3583 BIOCHEMICAL TECHNIQUES
CHEM 4184 INTRO TO MOLEC MOD & ITS APPL
CHEM 4284 EXP ANALITICAL PROB SOLVING
CHEM 4285 CHEMICAL SEPARATION METHODS
CHEM 4381 PHYSICAL CHEMISTRY III
CHEM 4481 ADV INORG CHEMISTRY
CHEM 4483 INORG CHEM LAB

RECREATION

REC 1100 INTRODUCTION TO THE RECREATION AND
LEISURE PROFESSION
REC 2915 INTRODUCTION TO HORTICULTURAL
THERAPY
REC 3500 HOSPITALITY AND TOURISM
REC 3510 CULTURAL TOURISM: TRADITIONS AND
PASTIME
REC 3810 RECREATION & THE ENVIRONMENT

SOCIOLOGY

SOC 2500 INTRO TO GLOBAL STUDIES
SOC 3150 URBAN SOCIOLOGY
SOC 3151 THE COMMUNITY
SOC 3360 POPULATION
SOC 3420 ENVIRONMENT AND SOCIETY