Universidad de Puerto Rico
Colegio de Agricultura y Artes Mecánicas
SENADO ACADEMICO
Mayagüez, Puerto Rico

Certificación Núm. 69-1

Yo, Gloria A. Viscasillas, Secretaria del Senado Académico del Recinto Universitario de Mayagüez de la Universidad de Puerto Rico, CERTIFICO:

Que en reunión ordinaria celebrada el día 13 de marzo de 1969 este organismo APROBO, para su inclusión en el Catálogo, los cursos nuevos, redescripción de cursos y modificaciones de cursos existentes para los Departamentos de Biología, Matemáticas, Inglés y Ciencias Marinas, de la Facultad de Artes y Ciencias, según aparecen en el documento que se acompaña y se hace formar parte de esta Certificación.

Enmiéndese el Catálogo de acuerdo con esta Certificación.

Y para que se ejecute este acuerdo, expido y remito la presente a las autoridades universitarias correspondientes hoy día diecisiete de marzo de mil novecientos sesenta y nueve, en Mayagüez, Puerto Rico.

Gloria A. Viscasillas
Secretaria

Anejo

Universidad de Puerto Rico
Recinto Universitario de Mayaguez
Senado Académico

DESCRIPCION DE CURSOS NUEVOS APROBADOS POR EL COMITE DE CURSOS DEL SENADO ACADEMICO EN REUNION CELEBRADA EL MARTES 25 DE FEBRERO DE 1969.

1. FACULTAD DE ARTES & CIENCIAS

A. Departamento de Biología:

1. Zool. 105. General Zoology. Four credit hours. Three lectures and one three-hour laboratory per week. Prerequisite: Biol. Sc. 002.

A survey of the different phyla of the Animal Kingdom. A general account of the morphology, physiology, ecology and evolution of the different groups, with references to their importance to human welfare.

(This new course will substitute for the existing Zool.101 (Animal Biology) and Zool. 102, (Animal Biology courses).

2. Zool. 647. Invertebrates of Puerto Rico. Three credit hours. Two lectures and one three-hour laboratory per week. Prerequisite: Graduate standing.

Taxonomy and ecology of the most common invertebrates of Puerto Rico, specially Arthropoda (exclusive of insects and marine forms) and Mollusca. Field trips.

3. Zool. 618. Advanced Ornithology. Three credit hours. Two lectures and one three-hour laboratory per week. Prerequisite: Zool. 418 (General Ornithology) or permission of Head of Department.

Studies include instinctive behavior in the life of birds, breeding cycles, social relationships, territory, ecology, characteristics of populations, and the techniques used in the field study of birds.

4. Bota. 105. General Botany. Four credit hours. Three lectures and one three-hour laboratory per week. Prerequisite: Biol. Sc. 002.

An introductory study of the structure and physiology of the flowering plants. A general survey of the Plant Kingdom, with emphasis on classification evolution of vegetative and reproductive structures, and the study of selected life cycles.

Cont. Bota. 105.

(This course may substitute the existing Bota. 101 (Plant Biology) and Bota. 102 (Plant Biology) courses).

5. Biol. 302. General Microbiology. Three credit hours. Two lectures and one three hour laboratory per week. Prerequisites: Biol. Sc. 001-002; Chem. 252.

The structure, metabolism, growth, inhibition and death, genetics, pathogenicity, taxonomy, and applied considerations of microorganisms.

(This course substitutes the existing Bota. 302 (General Bacteriology) course).

6. Biol. 605. Environmental Pollution and Disturbance. Three credit hours. Two lectures and one three-hour laboratory per week. Prerequisite: Biol. 551 or permission of the Director of the Department.

An ecological consideration of pollution and disturbance of the environment. The effects of industrial, domestic and other pollutants of the ecosystem. The physical, chemical and biological parameters used in pollution control and abatement. Field trips.

7. Biol. 553. Virology. Three credit hours. Two lectures and one three-hour laboratory per week. Prerequisite: Biol. 302.

The classification, structure, physiology and biochemical activities of viruses.

8. Biol. 653. Advanced Virology. Three credit hours. Two lectures and one three-hour laboratory per week. Prerequisite: Biol. 553.

The interrelation of viruses and animal, plant and bacterial cells. Laboratory practice with emphasis on viral diagnosis.

II- Redescripción de cursos:

1. Biol. 311. Genetics. Three credit hours. Two lectures and one three hour laboratory per week. Prerequisite: Bota. 105; Zool. 105.

An introductory course, dealing with nuclear and non-nuclear organism, covering the nature, transmission and move of action of the genetic material.

(This is the redescription of the existing Biol. 311 course).

2. Biol. 481. Evolution. Two credit hours. Two lectures per week.

Organic evolution as the unifying concept; nature of evidence for evolution; Darwinian and neo-Darwinian concepts.

3. Biol. 482. Evolutionary Genetics. Two credit hours. Two lectures per week.

The application of genetics to the study of evolution; mechanisms of evolution.

(These two courses are redescriptions of the existing Biol. 481-482. These can be taken separately).

4. Biol. 405. Human Genetics. Two credit hours. Two lectures per week. Prerequisite: Biol. 311.

A study of inheritance in man. Effects of mutation selection and racial mixture; the application of genetics to medical problems.

(Redescription of existing Biol. 405 course)

5. Biol. 625. Advanced Genetics. Three credit hours. Two lectures and one three hour laboratory per week. Prerequisite: Biol. 311.

Discussion of selected topics in genetics.

B. Departamento de Matemáticas:

Modificaciones de cursos existentes:

1. Math. 123-124 se describen separadamente como sigue:

Math. 123. Calculus I. Four credit hours. Four meetings per week. Prerequisite: Math. 107.

Elementary differential and integral calculus of one real variable, with applications.

Math. 124. Calculus II. Four credit hours. Four meetings per week. Prerequisite: Math. 123.

Infinite series; some linear algebra, with applications to analytic geometry in three-dimensional spaces.

2. Math. 223 se describe como sigue:

Math. 223. Calculus III. Three credit hours. Three lecture-discussions per week. Prerequisite: Math. 124.

Differential and integral calculus of several variables, with applications.

3. Math. 301-302, se describen separadamente como sigue:

Math. 301. Introduction to Linear Alegra. Three credit hours. Three lecture-discussions per week. Prerequisite: Math. 124.

Cont. Math. 301-302.

Euclidean vector spaces, matrices and linear equations, spectral decomposition of normal operators.

Math. 302. Introduction to Algebraic Structures. Three credit hours. three lecture-discussions per week. Prerequisite: Math. 124.

Introduction to algebraic systems; sets, semigroups, groups, rings, fields.

4. Math. 222 pasa a ser Math. 322 con la siguiente descripción:

Math. 322. Elementary Differential Equations. Three credit hours. Three lecture-discussions per week. Prerequisite: Math. 223.

First and second order equations, equations of order n, basic existence theorem, linear systems, the Laplace transform, series solutions, numerical methods.

Cursos Nuevos:

Math. 105-106. Introductory Mathematics. Three credit hours per semester. Three meetings per week each semester.

An integrated course in College Algebra and Trigonometry.

Math. 205-206. Introductory Calculus. Three credit hours per semester. Three meetings per week each semester. Prerequisite: Math. 105-106 or equivalent.

A basic course in differential and integral calculus of one real variable, and analytic geometry with applications.

Math. 473. Introduction and applications of Fourier Series. Three credit hours. Three lecture-discussions per week. Prerequisite: Math. 223.

Trigonometric series, Orthogonal expansions, introduction to boundary value problems and Hilbert Spaces.

Math. 499. Undergraduate Seminar. One credit-hour, one meeting per week. Prerequisites: Math. 302 or its equivalent and Math. 381 or its equivalent.

Introduction to the methods of mathematical research, application of abstract methods to concrete situations. Recommended for all students who intend to pursue graduate studies in mathematics.

Math. 571. Intermediate Differential Equations. Three credit hours. Three lectures-discussions per week. Prerequisites: Math. 322 and Math. 301 or its equivalent.

Cont. Math. 571.

Existence, continuity and differentiability of solutions, stability and Lyapunov's Theorem.

English 353. History of the English Language. Three credit hours. Three meetings per week. Prerequisite: English 202 or 242.

The rise of the English Language from Anglo-Saxon times to the Elizabethian period, with special emphasis on the influence of the Norman Conquest, the Middle English period, and the linguistic evolution of modern English.

English 411. The Novel in English Literature. Three credit hours. Three meetings per week. Prerequisite: English 202 or 242.

Works by the major English novelists from the Eighteenth Century to the present will be discussed.

English 413. The Novel in American Literature. Three credit hours. Three meetings per week. Prerequisite: English 202 or 242.

Works by the major American novelists of the Nineteenth and Twentieth Centuries will be discussed.

English 415. The Transcendental Movement in American Literature. Three credit hours. Three meetings per week. Prerequisite: English 202 or 242.

Emerson, Thoreau and their contemporaries.

English 417. Modern British Drama. Three credit hours. Three meetings per week. Prerequisite: English 202 or 242.

The Major English and Irish playwrights from Wilde and Shaw to the present.

English 419. Modern American Drama. Three credit hours. Three meetings per week. Prerequisite: English 202 or 242.

The major figures of the American theatrical renaissance from O'Neil to the present.

English 421. The Rise of American Realism. Three credit hours. Three meetings per week. Prerequisite: English 202 or 242.

American literature from Mark Twain to Dreiser.

English 423. Morphology and Syntax. Three credit hours. Three meetings per week. Prerequisite: English 231.

A descriptive analysis of words in their relation to phonology, syntax, and the lexicon.

Departamento de Ciencias Marinas:

MA SC 618. Oceanographic Hydrodynamics. Three credits hours. Three lectures per week.

Geopotential coordinate, Lagrangian and Eulerian kinematics, Eulerian expansion, equation of continuity, Navier-Stokes equations, vertical stability, Coriolis effect, geostrophic currents, inertial currents, Ekman currents, diffusion and turbulent processes, linearized wave theory, open and closed basin resonance.

MA SC 619 A.B.C. Special topics in Physical Oceanography. One to three credits hours. One to three sessions per week.

Selected topics in physical oceanography.

MA SC 638. Selected Topics in Physiological Ecology. Three credits hours. Three sessions per week.

The physiological bases for ecological relationships as displayed in representative examples of marine species. Individual laboratory projects will be required of all students.

MA SC 640. Special Topics in Marine Physiology. Three credits hours. One lecture and two laboratories per week.

Course dealing with specific techniques in the laboratory related to problems in areas of osmoregulation, ionic equilibrium and pigment physiology.

MA SC 658. Systematics of Marine Invertebrates. Three credits hours. Five lectures and nine laboratory hours per week during summer sessions.

Taxonomy, phylogeny and distribution of marine invertebrates with emphasis on local forms.

MA SC 646. Morphology of Marine Invertebrates. Three credits hours. Two lectures and one laboratory per week.

Form, structure and function of representative marine invertebrates.

MA SC 647 A.B.C. Special Topics in Marine Invertebrates. One to three credits hours. One to three sessions per week.

Supervised studies on specific selected aspects of marine invertebrates or techniques pertaining to their study.

MA SC 648. Marine Invertebrate Embriology. Three credits hours Three lectures and/or laboratories per week.

The development of marine invertebrates from fertilization and cleavage, through larval stages and into the adult. Phylogeny on embryological evidence. Laboratory cultures.

MA SC 653. A.B.C. Special Topics in Fisheries Biology. One to three credits hours. One to three sessions per week.

Individual study on the biology of commercial fish and invertebrates and on commercial fisheries.

MA SC 662. A.B.C. Special Topics in Marine Algae. One to three credits hours. One to three sessions per week.

Individual study on selected problems dealing with the marine algae of Puerto Rico.

MA SC 664. Ichthyology 1. Three credits hours. Two lectures and one laboratory per week.

A study of the morphology, physiology and ecology of fishes. Emphasis on marine forms.

MA SC 665. Ichthyology II. Three credits hours. Two lectures and one laboratory per week.

A study of the systematics, evolution and distribution of fishes. Emphasis on marine forms.

MA SC 666. A.B.C. Special Topics in Ichthyology. One to three credits hours. One to three sessions per week.

Individual study on marine fishes.

MA SC 668. Pigment Physiology. Three credits hours. Three lectures per week.

Physiological function of marine pigments.