

Course Description

BIOLOGICAL SCIENCES

BIO 100. FUNDAMENTALS OF BIOLOGICAL SCIENCES

Origin and evolution of life; biological diversity; cell metabolism, and energy transformation; system regulation; heredity and reproduction; growth and development; population dynamics; community and ecosystems

Prerequisite: none
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 105. GENERAL BIOLOGY I

Logic, nature, methods, concepts and principles of biology with emphasis on the molecular, cellular and organismic levels of organization

Prerequisite: none
8 hours a week (3 lec, 5 lab)
Credit: 5 units

BIO 110. GENERAL BIOLOGY II

Continuation of General Biology 1 concentrating on reproductive biology, developmental biology, genetics, evolution, taxonomy, and ecology

Prerequisite: BIO 105
8 hours a week (3 lec, 5 lab)
Credit: 5 units

BIO 200/BIOSCI 100. GENERAL MICROBIOLOGY

A survey of microorganisms; biology of bacteria; and introduction to applied microbiology.

Prerequisites: BIO 105 for BS Biology, BIO 100 for BSEd & BEEd, BOT 100 & ZOO 100 for other courses
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 200a. GENERAL MICROBIOLOGY

Anatomy, physiology and genetics of microorganisms, particularly those of typical and atypical bacteria, viruses, veroids, and prions

Prerequisite: BIO 110
8 hours a week (3 lec, 5 lab)
Credit: 5 units

BIO 205. PLANT MORPHOLOGY AND ANATOMY

Form and external features (morphology) and internal structure (anatomy) of vascular plants taking representative examples from Divisions (1)

Psilopsida, (2) Sphenopsida, (3) Pteropsida (ferns), gymnosperms and angiosperms; origin and development of the various kinds of cells and tissues of the roots, stems and leaves

Prerequisite: BIO 105
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 210. ANIMAL MORPHOLOGY AND ANATOMY

Comparative and phylogenetic study of vertebrate organ systems, their development, structure, and functions

Prerequisite: BIO 105
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 215. SYSTEMATIC BIOLOGY

Concept of species and the higher taxa, and categories in plants, animals and microorganisms; individual and geographic variation; taxonomic characters identification; classification; biological nomenclature

Prerequisite: BIO 110
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 220. BIostatISTICS

Statistical analysis of biological data, principles of experimental designs, probit analysis, linear regressions, and correlation analysis of variance

Prerequisite: STAT 200
3 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 225. BIOLOGICAL TECHNIQUES

Laboratory techniques in biological research, biological instrumentation, collection, preparation, and preservation of biological specimens

Prerequisite: BIO 110
6 hours a week (1 lec, 5 lab)
Credit: 3 units

BIO 225a. BIOTECHNIQUES

Principles in preparing biological specimens and instruments for field and laboratory activities, development of skills in preparing biological specimens and instruments for field and laboratory activities

Prerequisites: BOT 105, ZOO 105
6 hours a week (1 lec, 5 lab)
Credit: 3 units

BIO 230/BIOSCI 110. PRINCIPLES OF ECOLOGY

Plants and animals in relation to environment, plant and animal association, population dynamics and ecosystems

Prerequisite: BIO 110
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 230a. PRINCIPLES OF ECOLOGY

General concepts and principles pertaining to the complex pattern of interaction between the physical environment and the biological communities on earth; emphasis on the current environmental issues and concerns; assessment of environmental quality; laboratory dealing with the basic principles and methodologies pertaining to population and community structure

Prerequisite: BIO 110
8 hours a week (3 lec, 5 lab)
Credit: 5 units

BIO 230b. ECOLOGY

Introduction of the general concepts and principles pertaining to the complex pattern of interaction between the physical and the biological communities on earth; current environmental issues and concerns

Prerequisite: BIO 100
3 hours lecture a week
Credit: 3 units

BIO 235. ANIMAL DEVELOPMENTAL BIOLOGY

Early development of representative vertebrates, processes and principles

Prerequisite: BIO 110
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 240. METHODS OF BIOLOGICAL RESEARCH

Methods and techniques in biological research, identification of problems, formulation of hypothesis and preparation of research proposal using scientific writing principles and writing other forms of communication including publication of scientific findings and managing reference materials

Prerequisite: Junior Standing
3 hours lecture a week
Credit: 3 units

BIO 245. BIO-ENTREPRENEURSHIP

Application of concepts and principles involved in the establishment of bio-based business; conceptualization and preparation of business proposal

Prerequisite: BIO 110
3 hours lecture a week
Credit: 3 units

BIO 250. BIOPRACTICE

Off-campus experience for six weeks in the field of biology in a government or private agency which utilizes the services of biologists and where full time work is done under the supervision of the agency head or designated constituent; orientation, evaluation, and sharing of experience before and after the field practice

Prerequisite: Junior Standing
Credit: 3 units

BIO 255. PLANT PHYSIOLOGY

Principles and fundamental aspects of vital plant functions, including nutrition, photosynthesis, absorption and translocation of materials, growth and development with emphasis on adaptive mechanism

Prerequisite: CHEM 220
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 260. ANIMAL PHYSIOLOGY

Principles of animal functions with emphasis on physiologic regulation and adaptations

Prerequisite: CHEM 220
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 265. GENETICS

Principles of heredity and variation; their application in plant and animal breeding, and problems involved in it; biometrical treatment of qualitative and quantitative characters

Prerequisites: BIO 105, STAT 200, CHEM 220
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 265a. GENETICS

Basic concepts and principles involved in the science of genetics; balanced view of both classical and molecular genetics; laboratory with chromosomal basis of inheritance, structure of genetic material, and Mendelian and non-Mendelian inheritance

Prerequisites: ZOO 105, BOT 105, STAT 200, CHEM 220
5.5 hours a week (3 lec, 2.5 lab)
Credit: 4 units

BIO 270. BIOTECHNOLOGY

The fundamental concepts of biotechnology and basic principles of molecular biology; techniques and application of recombinant DNA technology with emphasis on current literature

Prerequisite: BIO 265
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 275. BIODIVERSITY CONSERVATION

Concepts and values of biodiversity; extent and status of biodiversity; major threats and causes of degradation and loss; *in situ* and *ex situ* conservation measures; policies involved in biodiversity conservation

Prerequisite: BIO 230
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

BIO 280. CELL AND MOLECULAR BIOLOGY

Biochemical and molecular basis of cell structure and function including the techniques used to understand the cell structure and function

Prerequisite: CHEM 220
3 hours lecture a week
Credit: 3 units

BIO 280a. CELL BIOLOGY

Biochemical and molecular basis of cell structure and function including the techniques used to understand cell structure and function

Prerequisite: CHEM 220
3 hours lecture a week
Credit: 3 units

BIO 285. BIO-INDUSTRY

Lecture discussion and laboratory exposure to different bio-based industry such as oriental fermentation, mushroom production, vermicomposting and landscape design

Prerequisite: BIO 110
7.5 hours laboratory a week
Credit: 3 units

BIO 290. BIOETHICS

Philosophical study of morality in the biomedical and biotechnology fields covering the morality of using human and animals in research; morality of genetic manipulation for human purpose such as health and food, and technological advances that raise the questions on the definition of life and death

Prerequisite: BIO 110
3 hours lecture a week
Credit: 3 units

BIO 295. TEACHING OF BIOLOGY

Principles and methods in teaching biology; selection and organization of a course content and teaching procedures; and preparation of instructional materials

Prerequisite: Junior Standing
3 hours lecture a week
Credit: 3 units

BIO 300. SCIENCE, TECHNOLOGY AND SOCIETY

Nature of science and technology; relationship between science and society as these relate to other areas of knowledge; science and issues of development

Prerequisite: Consent of Instructor
3 hours lecture a week
Credit: 3 units

BIO 305. ANATOMY AND PHYSIOLOGY

The structure and functioning systems of the human body including health related environmental concerns; the laboratory emphasizing on experiments involving the human organ systems; microscopic and macroscopic examinations of tissues and organs of the human body

Prerequisite: ZOO 105, CHEM 220
5.5 hours a week (3 lec, 2.5 lab)
Credit: 4 units

BIO 399. UNDERGRADUATE SEMINAR

Review and discussion of researches, current scientific literature, and recent developments in biology

Prerequisite: Senior Standing
1 hour lecture a week
Credit: 1 unit

BIO 400a. UNDERGRADUATE THESIS I

Preparation of an outline for an experimental problem with the guidance and supervision of a faculty member

Prerequisite: BIO 240
Credit: 3 units

BIO 400b. UNDERGRADUATE THESIS II

Data collection and analysis of the results of the experiment; thesis writing, and presentation of results of the experiment

Prerequisite: BIO 400a
Credit: 3 units

BOT 100. GENERAL BOTANY I

Study of forms, structure and physiology of plants and their various organs.

Prerequisite: none

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

BOT 105. GENERAL BOTANY II

Study of the origin, heredity, evolution, classification and ecology of plants; collection and preparation of herbarium specimens

Prerequisite: BIO 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

BOT 235. PLANT ANATOMY AND PHYSIOLOGY

Structure and developmental anatomy of plants, reproductive structure, ontogeny and phenomena of differentiation; different chemical and physical processes taking place in living plants with special emphasis on photosynthesis, respiration, nutrition and growth

Prerequisites: BOT 105, CHEM 220

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

ZOO 100. GENERAL ZOOLOGY I

Study of forms, structure and physiology of animals and their various organs

Prerequisite: none

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

ZOO 105. GENERAL ZOOLOGY II

Study of the origin, evolution, heredity, classification and heredity of animals; collection and preservation of animals

Prerequisite: BIO 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

ZOO 240. HUMAN ANATOMY AND PHYSIOLOGY

CHEMISTRY

CHEM 100. GENERAL CHEMISTRY I

Basic chemistry with emphasis on matter, atomic structure, the periodic table, chemical bonding, reactions and solutions

Prerequisite: none

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 101. GENERAL CHEMISTRY I (FOR BSCEM)

Fundamental chemical concepts and principles that covers the structure of matter, atomic structure and chemical bonding; and chemical reactions: classification, stoichiometry and energetics, behavior of gases and solutions

Prerequisite: none

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 101. GENERAL CHEMISTRY I (FOR BSA)

Theoretical background of chemical principles of inorganic, organic, and analytical chemistry important to agriculture

Prerequisite: none

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 102. GENERAL AND INORGANIC CHEMISTRY

Introductory course in chemistry with emphasis on matter, atomic structure, the periodic table, chemical bonding, chemical reactions, stoichiometry, behavior of solid, liquids and gases, chemical equilibrium and energetics

Prerequisite: none

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 103. GENERAL AND INORGANIC CHEMISTRY

An introductory course in chemistry with emphasis on matter, atomic structure, the periodic table, chemical bonding, chemical reactions, stoichiometry and behavior of solids, liquids and gases

Prerequisite: none

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 105. GENERAL CHEMISTRY II

A survey course on the basic laws, theories, and principles of general chemistry to include atomic and molecular theories, trends of properties of elements of the Periodic Table; chemical energetics and thermodynamics; major behavior of gases, liquids, solutions, colloids, and the changes of the state of these materials; chemical equilibrium and kinetics, and basics of radiochemistry.

Prerequisite: CHEM 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 106. INORGANIC CHEMISTRY

A course covering the basic principles behind atomic structure, chemical equations and stoichiometry, periodic table, chemical bonding and molecular structure, gases, liquids, solids and solutions; experiments and exercises illustrating the concepts covered in inorganic chemistry

Prerequisite: CHEM 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 106a. INORGANIC CHEMISTRY

A course covering the basic principles of atomic structure, chemical equations and stoichiometry, periodic table, chemical bonding and molecular structure, gases, liquids, solids and solutions.

Prerequisite: CHEM 100

3 hours lecture a week

Credit: 3 units

CHEM 107. GENERAL CHEMISTRY II WITH INTRODUCTION TO ORGANIC CHEMISTRY

A comprehensive course on chemistry for non-majors with emphasis on atomic and molecular theories, periodic trends, chemical; energetic and thermodynamics, properties of gases, liquids and solids, chemical equilibrium, the basic of radiochemistry and to introduce the students to the basic concepts of organic chemistry including hybridization, structures, nomenclature and organic reactions

Prerequisite: CHEM 100

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 110. BASIC INORGANIC CHEMISTRY

Fundamental course for the chemistry major. Topics include properties of solutions, chemical kinetics, chemical equilibria, electrochemistry, nuclear chemistry, descriptive chemistry of metals, nonmetals and transition elements, solid and liquid behavior and chemical thermodynamics

Prerequisite: CHEM 101, MATH 105

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 200. ORGANIC CHEMISTRY I

An introduction to the fundamentals of organic chemistry including hybridization, structures, nomenclature, reaction mechanisms and organic reactions

Prerequisite: CHEM 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 201. ORGANIC CHEMISTRY 1

Includes a review of topics in general chemistry that are necessary for understanding organic chemistry, stereochemistry and nomenclature, physical and chemical properties, uses, preparations, reactions and mechanisms of hydrocarbons

Prerequisite: CHEM 100/CHEM 101

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 202. ORGANIC CHEMISTRY

An introduction to the fundamentals of organic chemistry with emphasis on hybridization, structures, nomenclature, organic reactions, reaction mechanisms and basic synthesis of organic compounds

Prerequisite: CHEM 102

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 203. ORGANIC CHEMISTRY

Organic structural theory and introduction to reaction mechanism, structure, properties and nomenclature of hydrocarbons, alkyl and alkyl halides, alcohols and phenols, ethers and epoxides; introduction to stereochemistry and elementary organic synthesis

Prerequisite: CHEM 103

4.5 hours a week (2 lec, 1 lab)

Credit: 3 units

CHEM 204. ORGANIC CHEMISTRY

Introduction to the fundamentals of organic chemistry, including hybridization, structures nomenclature and the application of electronic effects in predicting physical properties and reactivities; the chemistry of the different classes of organic compounds.

Prerequisite: CHEM 100

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 205. ORGANIC CHEMISTRY II

Application of theories in organic chemistry to physical and chemical properties of organic compounds; study of named reactions, discussion of journal articles that present the latest advances in organic chemistry and related fields

Prerequisite: CHEM 200

7 hours a week (2 lec, 5 lab)

Credit: 4 units

CHEM 206. ORGANIC CHEMISTRY II

Covers the nomenclature, physical and chemical; properties, uses, preparations, analysis, reactions and mechanisms of hydrocarbon derivatives

Prerequisite: CHEM 200/CHEM 201

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 210. ADVANCED ORGANIC CHEMISTRY

Structural analysis and identification of organic compounds

Prerequisite: CHEM 206

3 hours lecture a week

Credit: 3 units

CHEM 215. INTRODUCTION TO BIOCHEMISTRY

Structure, properties, and functions of biomolecules in living organisms; explanation of the building-up and breaking down of these biomolecules and regulation of these processes in the system; commercial, research, and medical applications of these biomolecules

Prerequisite: CHEM 200

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 220. BIOCHEMISTRY

Study of molecules and related compounds in the living cell, their structure, functions and chemical transformation attending life processes; nature and activities of enzymes and hormones in the regulation and control of the different metabolic pathways

Prerequisite: CHEM 200/CHEM 201/CHEM 202

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 221. BIOTECHNOLOGY AND BIOINFORMATICS

Covers the topics on genetic engineering, principles of polymerase chain reaction, and basic principles on bioinformatics

Prerequisite: CHEM 220

3 hours a week

Credit: 3 units

CHEM 225. QUANTITATIVE CHEMISTRY

Principles and practices of quantitative operations and chemical instrumentation

Prerequisite: CHEM 100

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 230. ANALYTICAL CHEMISTRY

Principles and techniques of qualitative and quantitative analysis

Prerequisite: CHEM 105, MATH 105

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 230a. ANALYTICAL CHEMISTRY

Introductory course in chemical analysis covering chemical principles and application of qualitative and quantitative methods; experimental techniques and development of skills in determining kinds (qualitative) and amounts (quantitative) of constituents of sample materials

Prerequisite : CHEM 105, MATH 105

8 hrs a week (3 lec, 5 lab)

Credit : 5 units

CHEM 231. BASIC ANALYTICAL CHEMISTRY

Covers the scope and aims of analytical chemistry, principles and practice of gravimetric and volumetric methods, potentiometry and spectrophotometry, analytical measurements and data analysis.

Prerequisite: CHEM 110, MATH 105

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 232. ANALYTICAL CHEMISTRY II

Principles and practice of quantitative operation and chemical instrumentation

Prerequisite: CHEM 230, CHEM 105

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 235. ADVANCED ANALYTICAL CHEMISTRY

Introduction to modern analytical chemistry covering analytical separation and instrumental methods of analysis emphasizing the principles of instrumentation, instrument components, limitations of measurement, and selection of appropriate techniques for specific analytical problems

Co-requisite: MATH 217

Prerequisite: CHEM 231

8 hours a week (3 lec, 5 lab)

Credit: 5 units

CHEM 240. TECHNICAL ANALYSIS

Theory and practice of selected quantitative methods of analysis including instrumentation analysis of feeds, soil and water, agricultural and industrial products

Prerequisite: CHEM 235
8 hrs a week (3 lec, 5 lab)
Credit : 5 units

CHEM 245. CHEMICAL STOICHEMISTRY

Introduction to the principles in the material balance associated with the chemical processes and the application of the mathematical calculations to the chemistry concepts.

Prerequisite: CHEM 231, MATH 218a
2 hours lecture a week
Credit: 2 units

CHEM 250. PHYSICAL CHEMISTRY I: CHEMICAL THERMODYNAMICS

Introduction to the laws and theories of physical chemistry including properties of phases and solutions, the laws of thermodynamics, and physical and chemical equilibrium of gases.

Co-requisite: MATH 218a
Prerequisite: CHEM 231, PHYS 206
3 hours a week lecture
Credit: 3 units

CHEM 251. PHYSICAL CHEMISTRY

CHEM 252. THERMODYNAMICS

CHEM 255. PHYSICAL CHEMISTRY LABORATORY I

Fundamentals of physical chemistry to include the study of the structures of atoms, molecules and the physical states of matter, solution and its properties and thermochemistry

Prerequisite: CHEM 235, MATH 217, PHYS 206
2.5 hours laboratory a week
Credit: 1 unit

CHEM 260. PHYSICAL CHEMISTRY II: CHEMICAL KINETICS

Fundamental concepts of chemical kinetics covering the quantitative study of rates of chemical reactions and the factors upon which they depend, principles fundamental to the understanding of the properties of the liquid and the solid state

Pre-requisite: CHEM 250, CHEM 255
3 hours lecture a week
Credit: 3 units

CHEM 265. PHYSICAL CHEMISTRY II LABORATORY

Fundamental concepts of electrochemistry, chemical kinetics and chemical equilibrium

Co-requisite: CHEM 260
Prerequisite: CHEM 255
2.5 hours laboratory a week
Credit: 1 unit

CHEM 266. PHYSICAL CHEMISTRY III QUANTUM CHEMISTRY

Fundamental principles and equations of quantum chemistry and their applications in atomic and molecular spectroscopy

Prerequisite: CHEM 260, CHEM 265
3 hours lecture a week
Credit: 3 units

CHEM 270. CHEMICAL LITERATURE

Tools and techniques needed for an extensive search of chemical literature in which a review paper is required resulting from an effective search of the various sources of chemical information

Prerequisite: CHEM 110, ENGL 125
1 hour lecture a week
Credit: 1 unit

CHEM 275. INDUSTRIAL CHEMISTRY

Introduction to the manufacture and production of some important organic and inorganic compounds and allied products.

Prerequisite: CHEM 231
3 hours lecture a week
Credit: 3 units

CHEM 280. ENVIRONMENTAL CHEMISTRY

The chemistry of the atmosphere, aquatic systems and soil with emphasis on the sources, distribution, fate and effects of the chemicals in these environmental systems as an introduction to toxicology and chemical remediation

Prerequisite: CHEM 110, CHEM 105
3 hours lecture a week
Credit: 3 units

CHEM 285. ADVANCED INORGANIC CHEMISTRY

Inorganic and coordination compounds to include theories of atomic structure and chemical bonding, molecular geometry, d-metal complexes, inorganic reactions and reaction mechanisms, electronic spectra of complexes, stereochemistry, molecular symmetry and group theory, inorganic

thermodynamics, acids and bases, redox chemistry and periodic properties of the elements

Prerequisite: CHEM 266

3 hours lecture a week

Credit: 3 units

CHEM 290. TEXTILE CHEMISTRY

Chemistry of selected natural and synthetic materials, textile dyeing, and finishing

Prerequisite: CHEM 200

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

CHEM 295. CONTRACTS, LAWS AND ETHICS

Professional ethics, patents and copyright and other laws and regulations affecting the practice of the chemistry profession

Prerequisite: CHEM 100

1 hour lecture a week

Credit: 1 unit

CHEM 296. PATENTS, INTELLECTUAL PROPERTY RIGHTS AND CHEMICAL ETHICS

Philosophy, rules and regulations and jurisdictions on patents, trademarks, trade secrets, discoveries and inventions, designs and other individual property, ethics, laws and regulations in practicing the chemistry profession

Prerequisite: Senior Standing

1 hour lecture a week

Credit: 1 unit

CHEM 315. CHEMISTRY OF NATURAL PRODUCTS

Properties, structures, and pathways for synthesis of important secondary metabolites; recent developments in research on isolation, structure elucidation and bioactivity testing of natural products

Prerequisite: CHEM 220, CHEM 210

3 hours lecture a week

Credit: 3 units

CHEM 320. POLYMER CHEMISTRY

Fundamentals of polymer chemistry, polymer thermodynamics, polymer processing and rheology, and application of polymers in separation, biotechnology, and electronics

Prerequisite: CHEM 210, CHEM 250

3 hours lecture a week

Credit: 3 units

CHEM 325. TOXICOLOGY

Chemistry that underlies the mechanisms by which poisons adversely affect the environment in general, and humans, in particular and the fundamentals of toxicity testing and risk assessment and management

Prerequisite: CHEM 220

3 hours lecture a week

Credit: 3 units

CHEM 330. MATERIALS SCIENCE

Fundamentals of materials science with emphasis on degradation of metals, polymers, and ceramics

Co-requisite: CHEM 285

Prerequisite: CHEM 210, CHEM 250

3 hours lecture a week

Credit: 3 units

CHEM 395. METHODS OF RESEARCH FOR CHEMISTRY

Covers the principles and methods in analytical process such as sampling, measurement, calibration, statistical methods and interpretation of results which are used in chemical analyses

Prerequisite: STAT 200

3 hours lecture a week

Credit: 3 units

CHEM 398. SEMINAR

Review and discussion of the methods in effective data presentation in a seminar

Prerequisite: Senior Standing

1 hour lecture a week

Credit: 1 unit

CHEM 399. PRACTICUM

Provide students with opportunity to apply their knowledge and skills in real-world problem for the students to obtain experiences in the practice of chemistry in various settings such as private government, industry and academic laboratories and research institutions

Prerequisite : CHEM 235, junior standing

Credit : 3 units

CHEM 400a&b. UNDERGRADUATE THESIS

Pre-requisite: Senior Standing, CHEM 240

Credit: 5 units

ERTSCI 100. EARTH SCIENCE

Introductory course in physical science with emphasis on astronomy, meteorology, and geology.

Prerequisite: none

3 hours lecture a week

Credit: 3 units

HPS 100. HISTORY AND PHILOSOPHY OF SCIENCE

DEVELOPMENT COMMUNICATION

DEVCOM 100. INTRODUCTION TO DEVELOPMENT COMMUNICATION

Communication development theories and analytical survey of communication media for development

Prerequisite: none

3 hours lecture a week

Credit: 3 units

DEVCOM 105. FUNDAMENTALS OF DEVELOPMENT JOURNALISM

Principles in gathering and writing of developmental news and information with emphasis on news recognition and accuracy

Prerequisite: DEVCOM 100

3 hours lecture a week

Credit: 3 units

DEVCOM 110. FUNDAMENTALS OF COMMUNITY BROADCASTING

Principles of gathering communication materials through the broadcast media; concepts of community broadcasting; introduction to broadcast station management and practice, program planning, and production

Prerequisite: DEVCOM 100

3 hours lecture a week

Credit: 3 units

DEVCOM 115. FUNDAMENTALS OF AUDIO-VISUAL COMMUNICATION

Overview of audio-visual communication; practice in planning and designing of simple visual aids

Prerequisite: DEVCOM 100

3 hours lecture a week

Credit: 3 units

DEVCOM 120. COMMUNICATION AND SOCIETY

The role of communication in society with special reference to the Asian situation; type of communication media and rights and responsibilities of the communication media

Prerequisite: DEVCOM 100

3 hours lecture a week

Credit: 3 units

DEVCOM 125. COMMUNICATION CAMPAIGNS AND PROGRAMS

Planning and evaluation of educational and promotional campaigns and programs

Prerequisite: none

3 hours lecture a week

Credit: 3 units

DEVCOM 130. TESTING AND EVALUATION OF COMMUNICATION MATERIALS

Methods of testing and evaluating print, broadcast and audio-visual communication materials, audience studies including evaluation of communication materials in all forms relative to gender

Prerequisite: Junior Standing

3 hours lecture a week

Credit: 3 units

DEVCOM 135. INTRODUCTION TO COMMUNICATION RESEARCH

Principles and techniques of communication research in relation to social change and development

Prerequisite: STAT 200

3 hours lecture a week

Credit: 3 units

DEVCOM 140. BROADCAST SPEECH AND PERFORMANCE FOR COMMUNITY RADIO

Announcing, voicing, recording and directing techniques for community radio programs

Prerequisite: DEVCOM 110

3 hours lecture a week

Credit: 3 units

DEVCOM 145. WRITING AND PROGRAM PLANNING FOR COMMUNITY RADIO

Script-writing for community radio; program planning and building, producing news interviews, variety and other radio programs

Prerequisite: DEVCOM 110

3 hours lecture a week

Credit: 3 units

DEVCOM 150. EDUCATIONAL BROADCAST

Planning, conduct and evaluation of radio schools and other educational formats

Prerequisite: DEVCOM110

3 hours lecture a week

Credit: 3 units

DEVCO 155. SCIENCE REPORTING AND ADVANCED DEVELOPMENTAL WRITING

Interpretation of scientific and specialized topics for a popular audience, with emphasis on reliability, study of writing styles, and techniques for purposive communication through printed media

Prerequisite: DEVCOM 105
3 hours lecture a week
Credit: 3 units

DEVCOM 160. PUBLICATIONS WRITING AND EDITING

Preparation and processing of informational publications including the mechanics of layout, copy reading, copy fitting and the use of illustrations

Prerequisite: DEVCOM 105
3 hours lecture a week
Credit: 3 units

DEVCOM 165. MANAGEMENT AND PRODUCTION OF A COMMUNITY NEWSPAPER

Theory and practice of managing and producing a community newspaper

Prerequisite: DEVCOM 105
3 hours lecture a week
Credit: 3 units

DEVCOM 170. INTRODUCTION TO MANAGEMENT INFORMATION SYSTEM

Study of information flow and control system, recording, documenting and storing as well as retrieving information and documents for decision making purposes

Prerequisite: DEVCOM 115
3 hours lecture a week
Credit: 3 units

DEVCOM 399. DEVELOPMENT COMMUNICATION INTERNSHIP

Supervised work experience in development communication in press, publication, broadcasting, and communication offices

Prerequisite: Junior Standing
3 hours lecture a week
Credit: 3 units

EDUC 135. MEDIA ETHICS, LAWS AND VALUES ENGLISH AND HUMANITIES

ENGL 100. STUDY AND THINKING SKILLS

Development of students' communicative and thinking skills and of knowledge that can help them in

their academic endeavor. Lessons such as the different levels of thinking, the use of library, dictionary and other resources needed for studying word to sentence analysis are discussed in this course.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

ENGL 105. SPEECH COMMUNICATION

Development of students' speech communication skills emphasizing on phonology, listening kinds of speeches, and eliminating stage frights or anxiety for effective use in different situations

Prerequisite: ENGL 100
3 hours lecture a week
Credit: 3 units

ENGL 110. WRITING IN THE DISCIPLINE

Research and writing skills with business correspondence in their specific disciplines

Prerequisite: ENGL 100
3 hours lecture a week
Credit: 3 units

ENGL 115. INTRODUCTION TO LITERATURE

Critical, analytical and appreciative thinking in studying of representative literary genres of Filipino and non-Filipino literary works which have significant themes towards the realization of human life and realities

Prerequisites: ENGL 100, ENGL 105, ENGL 110*
3 hours lecture a week
Credit: 3 units

* except degree programs which do not require ENGL 110

ENGL 125. TECHNICAL WRITING

Writing reports on technical and scientific subjects and their oral presentation in class to include forms of business and periodical writing, short form reports, and abstracts

Prerequisite: ENGL 100, ENGL 105, ENGL 110*
3 hours lecture a week
Credit: 3 units

* except degree programs which do not require ENGL 110

ENGL 130/285. PUBLIC SPEAKING, ARGUMENTATION AND DEBATE

Training of English majors and development communication students in logical reasoning,

organization, and factual presentation through public speech and debate – the art of expressing freely and intelligently and arguing on social issues

Prerequisite: ENGL 110

3 hours lecture a week

Credit: 3 units

ENGL 201. BASIC ENGLISH GRAMMAR

ENGL 205. INTRODUCTION TO LINGUISTICS

Overview of linguistics as a discipline, its development, levels of structure, and significance to English language teaching

Prerequisite: ENGL 105

3 hours lecture a week

Credit: 3 units

ENGL 210. THE STRUCTURE OF ENGLISH

Covers the meta-language of grammar: the form, meaning, and use of the elements of grammar

Prerequisite: ENGL 105

3 hours lecture a week

Credit: 3 units

ENGL 215. EXPOSITORY AND CREATIVE WRITING

Study of concepts and principles of expository writing, exploring ideas and arguments on certain issues of written and oral presentation for expository and opinion research

Prerequisite: none

3 hours lecture a week

Credit: 3 units

ENGL 218. PROFESSIONAL AND SCIENTIFIC WRITING

ENGL 220. SPEECH AND THEATRE ARTS

Process of oral communications and the various forms of speech arts from public speaking and group discussions to debate, oral interpretation and dramatics.

Prerequisite: ENGL 105

3 hours lecture a week

Credit: 3 units

ENGL 230. CAMPUS JOURNALISM

Principles and strategies in writing the various parts (e.g., editorial, news, feature) of a campus paper, organizing, and managing it

Prerequisite: ENGL 110

3 hours lecture a week

Credit: 3 units

ENGL 235. PHILIPPINE LITERATURE IN ENGLISH

Analysis the growth and development of Philippine literature in English from 1900 to the present along with socio-historical events as shown in representative works.

Prerequisite: ENGL 105, ENGL 110, ENGL 115*

3 hours lecture a week

Credit: 3 units

* except degree programs which do not require ENGL 115

ENGL 240. TRANSLATION AND EDITING OF TEXT

Rules of discourse and rhetoric in editing various types of written material and principles and strategies in translating texts of various types from English to another language or from another language to English.

Prerequisite: ENGL 110 for BSEd, ENGL 125, LL 315, 350 for ABLL

3 hours lecture a week

Credit: 3 units

ENGL 250. ENGLISH FOR SPECIFIC PURPOSES

Language skills through the use of discipline-based materials for the development of academic proficiency.

Prerequisite: ENGL 110 for BSEd, LL 350, ENGL 340 FOR ABLL

3 hours lecture a week

Credit: 3 units

ENGL 260. AFRO-ASIAN LITERATURE

Study of representative literary works of early and contemporary African and Asian writers

Prerequisite: ENGL 115

3 hours a week lecture

Credit: 3 units

ENGL 265. READING DIAGNOSIS AND EMEDIATION

Introductory examination of representative methods for diagnosis and correlated activities for correction of reading problems

Prerequisite: none

3 hours lecture a week

Credit: 3 units

ENGL 270. MYTHOLOGY AND FOLKLORE

Study of mythological and folk narratives of countries, in particular.

Prerequisite: ENGL 115 for BEd,
ENGL 315, 325 for ABLL

3 hours lecture a week

Credit: 3 units

ENGL 280. INTRODUCTION TO STYLISTICS

This course conceptual frameworks and schemes of linguistics and literature in understanding literary language.

Prerequisite: ENGL 115

3 hours lecture a week

Credit: 3 units

ENGL 290. ENGLISH AND AMERICAN LITERATURE

Study of representative literary works by early and contemporary English and American writers.

Prerequisite: ENGL 115

3 hours lecture a week

Credit: 3 units

ENGL 295. THE TEACHING OF SPEAKING

Speaking component of language taking into account its nature, its theoretical underpinnings, the competencies to be developed, and productive teaching-learning strategies.

Prerequisite: ENGL 220

3 hours lecture a week

Credit: 3 units

ENGL 297. INTERACTIVE ENGLISH: WRITING, SPEAKING AND GRAMMAR

Extensive practice of communication in different contexts using appropriate linguistic forms focusing on interpersonal and public speech situation, as well as various types of written discourse using both traditional and electronic means.

Prerequisite: ENGL 110

3 hours lecture a week

Credit: 3 units

ENGL 300. THE TEACHING OF LISTENING AND READING

Listening and reading component of language taking into account the nature, the theoretical underpinnings, the competencies to be developed and productive teaching learning strategies.

Prerequisite: ENGL 110, ENGL 205, ENGL
210 for BEd ENGL 100, ENGL
105, ENGL 110 for BEd

3 hours lecture a week

Credit: 3 units

ENGL 305. LANGUAGE AND LITERATURE ASSESSMENT

Construction of both discrete and integrative listening, speaking, reading, writing and literature tests to assess language proficiency and achievement, and literary competence.

Prerequisite: ENGL 205, ENGL 210, ENGL
260, ENGL 290

3 hours lecture a week

Credit: 3 units

ENGL 310. REMEDIAL INSTRUCTION IN ENGLISH

Organizing, designing, implementing and evaluating remedial English program in any of the four macro skills: Speaking, reading, listening and writing.

Prerequisite: ENGL 205, ENGL 210, ENGL
260, ENGL 290

3 hours lecture a week

Credit: 3 units

ENGL 311. ADVANCED SPEAKING ENGLISH

ENGL 315. CREATIVE WRITING

Forms of discourse stressing their essential features and characteristics, to develop the ability to write narrative, descriptive expository and argumentative compositions using representative reading selections as models

Prerequisite: ENGL 260, ENGL 270, ENGL
280, ENGL 290 for BEd, LL
325, LL 355 for ABLL

3 hours lecture a week

Credit: 3 units

ENGL 320. LITERARY CRITICISM

Standard direction in shaping student perspectives about a work of literature through discussion of the major approaches to literary criticism.

Prerequisite: ENGL 315

3 hours lecture a week

Credit: 3 units

ENGL 325. TEACHING OF LITERATURE

Exploration of the basic pedagogical theories, teaching strategies, philosophical influences and movements in literature as they affect teaching.

Prerequisite: ENGL 320 for BSEd ENGL 235,
LL 310, LL 325, LL 330, LL 335,
LL 355 for ABLL

3 hours lecture a week

Credit: 3 units

**ENGL 330. LANGUAGE CURRICULUM FOR
SECONDARY LEVEL**

Familiarization on the components of a language curriculum – its theoretical underpinnings, content, and development process as bases for evaluating the current secondary education language program and for designing future language programs suitable to Philippine setting including proper interpretation of defined competencies.

Prerequisite: ENGL 310

3 hours lecture a week

Credit: 3 units

**ENGL 335. PREPARATION AND EVALUATION OF
INSTRUCTIONAL MATERIALS**

This course is an evaluation and development of various types of instructional materials in English suitable to the teaching and learning of a specific language objective.

Prerequisite: ENGL 305, ENGL 320

3 hours a week lecture

Credit: 3 units

ENGL 340. LANGUAGE RESEARCH (FOR BSED)

Application of principles and approaches in research to find answers to questions in language learning and teaching.

Prerequisite: ENGL 305

3 hours lecture a week

Credit: 3 units

ENGL 340. LANGUAGE RESEARCH (FOR ABLL)

Application of principles and approaches in research to find answers to questions in language learning and teaching. It shall also introduce to the students the basic principles and methods of literary research

Prerequisite: STAT 200, ENGL 125, ENGL
210, ENGL 230, ENGL 235,
ENGL 305, LL 215, LL 330, LL
335, LL 340

3 hours lecture a week

Credit: 3 units

HUMAN 100. INTRODUCTION TO THE HUMANITIES

Introduction to the different visual, auditory and performing arts, their underlying principles, content and form as heightened and imaginative expression of man's thoughts, feelings and responses to situation and universe in which he lives

Prerequisite: none

3 hours lecture a week

Credit: 3 units

DEPARTAMENTO NG FILIPINO**FILI 100. KOMUNIKASYON SA AKADEMIKONG
FILIPINO**

Pag-aaral sa iba't-ibang larangan at pagkakataon upang mauunawaan at malilinig ang mga estudyante sa mga kailangang kaalaman at kasanayan sa paggamit ng Filipino sa lalong mataas na edukasyon.

Prerequisite: none

3 hours lecture a week

Credit: 3 units

**FILI 105. PAGBASA AT PAGSULAT TUNGO SA
PANANALIKSIK**

Pagpapalawak ng mga kaalaman at kasanayan sa kritikal na pagbasa at lohikal na pagsulat tungo sa pagsasagawa ng sariling pananaliksik

Prerequisite: FILI 100

3 hours lecture a week

Credit: 3 units

FILI 110. MASINING NA PAGPAPAHAYAG

Malikhaing pagsulat kaugnay ng apat na paraan ng pagpapahayag: deskriptibo, naratibo, ekspositori at argumentatibo, na may pokus sa mga estilo ng wika; mga kasanayan sa pasalita at pasulat na pagpapahayag ng estudyante bilang isang indibidwal, bahagi ng etnikong grupo, mamayan ng isang bansa, at bahagi ng isang global na komunidad

Prerequisite: FILI 105

3 hours lecture a week

Credit: 3 units

FILI 115. PANITIKAN NG FILIPINAS

Pag-aaral sa iba't-ibang anyo ng literatura sa pamamagitan ng pagbabasa sa ilang tekstong pampanitikan na hango sa iba't-ibang rehiyon ng Pilipinas at iba't-ibang panahon ng kasaysayan ng bayan

Prerequisite: FILI 110

3 hours lecture a week
Credit: 3 units

**FILI 125. MGA ANYONG KONTEMPORARYONG
PILIPINO**

FILI 200. PANITIKAN NG REHIYON

Sumasaklaw sa pag-aaral ng mga pangunahing akda sa mga rehiyunal na wika maliban sa Tagalog. Maaaring orihinal o salin sa Filipino ang mga tekstong susuriin at pahahalagahang kultural.(Magbabagubago ayon sa local ngTEIs at walang duplikasyon sa panitikang rehiyon na bahagi ng GEC- Lit. 1)

Prerequisite: FILI 105, FILI 115
3 hours lecture a week
Credit: 3 units

FILI 205. SANAYSAY AT TALUMPATI

Pag-aaral ng pangkasaysayang pagkaunlad ng sanaysay nang kaagapay ang pagsulat ng mga kontemporaryong anyo nito, pati na ang pagsasanay sa pagsulat at pagbigkas ng talumpati

Prerequisite: FILI 100, FILI 105, FILI 110
3 hours lecture a week
Credit: 3 units

FILI 210. INTRODUKSYON SA PAG-AARAL NG WIKA

Mga teoryang sikolohikal, sosyolohikal, antropolohikal, linggwistik, at iba pa. na nakaiimpluwensya sa pagkakatuto ng wika at pag-aaral ng una at pangalawang wika gayundin ang mga isyung nakapaloob dito

Prerequisite: FILI 100, FILI 105, FILI 110
3 hours lecture a week
Credit: 3 units

**FILI 215. INTRODUKSYON SA PAMAMAHAYAG
(FOR BSED)**

Mga batayang linalaman ng pamamahayag at paglinang sa mga kasanayan sa pagsulat sa ibat-ibang uri at anyo ng sulating dyornalistik, kasama na rito ang paghahanda at pamamahala ng pahayagang pampaaralan

Prerequisite: FILI 110
3 hours lecture a week
Credit: 3 units

**FILI 215. INTRODUKSYON SA PAMAMAHAYAG
(FOR BEED)**

Mga batayang kaalaman ng pagpapahayag at paglinang sa mga kasanayan sa pagsulat ng ibat-ibang uri at anyo ng sulating jornalistik, kasama na rito ang

paghahanda at pamamahala ng pahayagang pampaaralan (BEEd).

Prerequisite: FILI 100, FILI 105, FILI 110
3 hours lecture a week
Credit: 3 units

FILI 220. INTRODUKSYON SA PAGSASALIN

Pag-aaral sa mga teorya, simulain at teknik sa pagsasalin ng mga tekstong literari at di-literari

Prerequisite: FILI 210
3 hours lecture a week
Credit: 3 units

FILI 225. PANIMULANG LINGGWISTIKA

Sumasaklaw sa mga batayang teorya ng wika at iba pang teorya na nakaiimpluwensya sa wika, sa pagtuturo nito, ang ortograpiyang Filipino at ang panimulang pag-aaral ng istraktura ng wikang Filipino. Pag-uusapan din ang mga kontemporaryong isyu ng wika partikular sa Filipino

Prerequisite: FILI 210
3 hours lecture a week
Credit: 3 units

**FILI 230. ANG KURIKULUM FILIPINO SA BATAYANG
ANTAS NG EDUKASYON**

Tumatalakay sa mga batayang teoretikal, nilalaman, katangian at panuntunan sa pagpapatupad ng nireistrukturang kurikulum sa Filipino at ang pag-angkop nito sa mga kondisyon at sitwasyong local

Prerequisite: FILI 100, FILI 105, 225
3 hours lecture a week
Credit: 3 units

FILI 235. PAGBASA NG OBRA MAESTRANG FILIPINO

Nagpapalalim sa nilalaman at kasaysayan sa pagbasa at pagsusuri ng mga obra maestrang Pilipino na itinuturo sa hayskul, gaya ng Ibong Adarna, Florante at Laura, Noli Me Tangere, El Filibusterismo, at iba pa

Prerequisite: FILI 240
3 hours lecture a week
Credit: 3 units

FILI 240. PANUNURING PAMPANITIKAN(FOR BSED)

Tumatalakay sa mga teorya, simulain at pamamaraan ng pagbasa, interpretasyon at pagsusuri ng panitikan mula Bagong Kritisismo hanggang Post Modernismo

Prerequisite: FILI 105
3 hours lecture a week
Credit: 3 units

FILI 240. PANUNURING PAMPANITIKAN(FOR BEED)

Pag-aaral ng iba't ibang anyo ng panitikan sa Pilipinas sa pamamagitan ng pagbabasa sa ilang tekstong pampanitikan na hango sa iba't ibang rehiyon ng Pilipinas at iba't ibang panahon ng kasaysayan ng bayan

Prerequisite: FILI 105
3 hours lecture a week
Credit: 3 units

FILI 245. PANULAANG FILIPINO

Pag-aaral ng pangkasaysayang pagunlad ng panulaang Filipino na may pagbibigay-diin sa mga sangkap ng tula sa pamamagitan ng pagsusuri sa ilang mahalagang tula na kumakatawan sa bawat panahon

Prerequisite: FILI 100, FILI 105
3 hours lecture a week
Credit: 3 units

FILI 250. DULA AT NOBELANG PILIPINO

Pangkasaysayang pagkaunlad ng dula at nobelang Pilipino na may pagbibigay-diin sa mga sangkap ng tula sa pamamagitan ng pagsusuri sa ilang mahalagang halimbawa nito na kumakatawan sa bawat panahon

Prerequisite: FILI 205
3 hours lecture a week
Credit: 3 units

FILI 255. INTRODUKSYON SA PANANALIKSIK – WIKA AT PANITIKAN

Sumasaklaw sa mga batayang kaalaman sa mga lawak, uri at metodo ng pananaliksik sa wika at panitikan

Prerequisite: FILI 100, FILI 105, FILI 205
3 hours lecture a week
Credit: 3 units

FILI 260. ISTRUKTURA NG WIKANG FILIPINO

Mga mahahalagang konsepto at batayang kaalaman sa istrukturang Filipino at ang analisis at aplikasyon nito sa pag-aaral at paglalarawan ng tunog, salita at pangungusap upang mapaunlad ang gamit ng Filipino sa deskriptibong pag-aaral ng wikang Filipino sa lebel ng ponolohiya, morpolohiya at sintaks upang higit na maitaas ang antas ng pag-aaral.

Prerequisite: FILI 210
3 hours lecture a week
Credit: 3 units

FILI 265. MAIKLING KWENTONG FILIPINO

Pag-aaral, pagpapahalaga at pagsusuri sa iba't ibang uri ng maikling kwentong Pilipino. Kasamang

tatalakayin ang kasaysayan, ang sining ng pagkuwento, pagsusuri sa anyo, istilo, bisang pampanitikan at mga sangkap nito mula noong Gintong Panahon hanggang sa kasalukuyan.

Prerequisite: FILI 200
3 hours lecture a week
Credit: 3 units

FILI 270. PAGTUTURO AT PAGTATAYA SA PAKIKINIG AT PAGSASALITA

Tumatalakay ito sa mga teorya, simulain at mga metodo sa pagtuturo at mga uri o pamaraan sa pagtataya ng mga kasanayan sa pakikinig at pagsasalita na gumagamit na gumagamit ng iba't ibang uri ng teksto at gawain

Prerequisite: FILI 100, FILI 105, FILI 235
3 hours lecture a week
Credit: 3 units

FILI 275. PAGTUTURO AT PAGTATAYA SA PAGBASA AT PAGSULAT

Tumatalakay ito sa mga teorya, simulain at mga metodo, sa pagtuturo at mga uri o pamaraan sa pagtaya ng mga kasanayan sa pagbasa at pagsulat na gumagamit ng iba't ibang uri ng teksto at gawain

Prerequisite: FILI 100, FILI 105, FILI 235
3 hours lecture a week
Credit: 3 units

FILI 280. PAGHAHANDA AT EBALWASYON NG KAGAMITANG PANTURO

Sumasaklaw sa pag-aaral ng mga teorya, simulain, pamamaraan, paggamit at ebalwasyon ng kagamitang panturo kasama ang mga materyales para sa alternatibong pagtuturo at pagkatuto

Prerequisite: FILI 230, FILI 270, FILI 275
3 hours lecture a week
Credit: 3 units

FILI 285. PAGTUTURO AT PAGTATAYA SA PANITIKAN

Pag-aaral ng mga kontemporaryong dulog at metodo sa pagtuturo ng iba't-ibang anyo sa panitikan nang kaugnay ng pagbubuo ng mga angkop na pamaraan sa pagtaya ng mga kaalaman at kasanayang natamo

Prerequisite: FILI 225
3 hours lecture a week
Credit: 3 units

FILI 290. PAGPAPAHALAGANG PAMPANITIKAN

Nagbibigay-kasanayan sa produksyon ng mga malikhaing obra at sariling likha ng mga estudyante sa iba't-ibang midyum ng interpretasyon tulad ng

sabayang pagbigkas, madulang pagbasa, reader's/chamber theater, pantomina, aplikasyon ng multimedia, at iba pa

Prerequisite: FILI 205, FILI 240, FILI 265
3 hours lecture a week
Credit: 3 units

FILI 295. KULTURANG POPULAR

Pag-aaral ng mga programang pan radyo, pantelebisyon, pelikula, komiks at pahayagan tungo sa pagsusuri at pagkaunawa sa mabuti at di-mabuting bisa ng mga ito sa pagbubuo ng katauhan o identidad

Prerequisite: FILI 100, FILI 105
3 hours lecture a week
Credit: 3 units

FILI 300. PANITIKAN NG UUNLAD NA BANSANG

MATHEMATICS AND PHYSICS

MATH 100. COLLEGE ALGEBRA

Unified treatment of the basic ideas and theories of generalized arithmetic to prepare the student to tackle subsequent algebraic applications through theoretical discussions of sets, real number system, algebraic expressions and operations, special products and factoring, fractions, exponents and radicals, linear and quadratic equations and simple applications.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

MATH 101. PRECALCULUS MATHEMATICS I

Unified treatment of the basic ideas and theories of generalized arithmetic. It prepares the student to tackle subsequent algebraic applications through theoretical discussions of sets, real number system, algebraic expressions and operations, special products and factoring, fractions, exponents and radicals, linear and quadratic equations and simple applications.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

MATH 102. FUNDAMENTALS OF MATHEMATICS

Sets, principles of logic, methods of proof, relations, functions, integers, binary operations, complex

numbers, matrices and matrix operations, and an introduction to mathematical system.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

MATH 103. BUSINESS MATHEMATICS

In-depth study of concepts and manipulative skills in arithmetic and generalized arithmetic. It covers a review of basic arithmetic operations, fractions, decimals, ratio and proportion, sets, special products and factoring, linear equations and their applications to business problems

Prerequisite: none
3 hours lecture a week
Credit: 3 units

MATH 104. CONTEMPORARY MATHEMATICS

Learning when and how mathematics can be used in many different real-life situations, following the principles: a) mathematics is useful, b) mathematics is realistic and relevant, c) mathematics is interesting, and d) mathematics is needed by all.

Prerequisite: MATH 102
3 hours lecture a week
Credit: 3 units

MATH 105. PLANE TRIGONOMETRY

Bird's eye-view on trigonometric and circular functions as essential concept in the study of higher mathematics to expose students to the use of scientific calculator, the basic concepts of inequalities and absolute values, distance and midpoint formulas, functions and graphs, circular functions, identities, trigonometric identities, solutions of right and oblique triangles, exponential and logarithmic functions and equations and simple applications.

Prerequisite: MATH 100/MATH 104
3 hours lecture a week
Credit: 3 units

MATH 106. PRE-CALCULUS MATHEMATICS II

Trigonometric and circular functions essential in the study of higher mathematics to expose students the use of scientific calculator, the basic concepts of inequalities and absolute values, distance and midpoint formulas, functions and graphs, circular functions, identities, trigonometric identities, solutions of right and oblique triangles, exponential and logarithmic functions and equations and simple applications.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

MATH 107. ADVANCED ALGEBRA AND TRIGONOMETRY

Concepts in algebra such as special products and factoring, linear equations, quadratic equations, system of linear equations, inequations and absolute values, concepts in trigonometry such as coordinate systems, functions and relations, distance between two points, line, circle, trigonometric functions and applications.

Prerequisite: MATH 104
3 hours lecture a week
Credit: 3 units

MATH 115. BASIC MATHEMATICS

The basic concepts, principles and operations of mathematics, computations with real numbers, fractions, percent, ratio and proportion, measurements, graphs, scales, drawings and experimental probability are all included.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

MATH 200. COLLEGE ALGEBRA II

Continuation of college algebra. It provides students with the necessary skills to analysis of both practical and theoretical problems requiring more sophisticated algebraic concepts, properties and procedures, linear equations in two variables, complex numbers, solutions of quadratic equations, properties and solutions of polynomial equations, progressions, mathematical induction and the binomial theorem.

Prerequisite: MATH 100
2 hours lecture a week
Credit: 2 units

MATH 201. ADVANCED ALGEBRA

Continuation of College Algebra, analysis of both practical and theoretical problems requiring more sophisticated algebraic concepts, properties and procedures, covers linear equations in two variables, complex numbers, progressions, mathematical induction and the binomial theorem, solutions of quadratic equations, properties and solutions of polynomial equations especially cubic and quartic (biquadratic) equations and partial fractions.

Prerequisite: MATH 104
2 hours lecture a week

Credit: 2 units

MATH 202. FUNDAMENTAL CONCEPTS OF MATHEMATICS

Sets, principles of logic, methods of proof, relations, functions, integers, binary operations, complex numbers, matrices and matrix operations, and an introduction to mathematical system.

Prerequisite: MATH 101, MATH 106
3 hours lecture a week
Credit: 3 units

MATH 203. DISCRETE MATHEMATICS

Fundamentals of logic and sets, the fundamental principles of counting, algorithms and some concepts in graph theory.

Prerequisite: MATH 106
3 hours lecture a week
Credit: 3 units

MATH 205. SPHERICAL TRIGONOMETRY AND SOLID GEOMETRY

Lines, surfaces and solids in Euclidean space, problems involving volume and distance, and applications of spherical triangles to provide adequate background for engineering students in the fields of surveying, navigation and astronomy.

Prerequisite: MATH 105
3 hours lecture a week
Credit: 3 units

MATH 210. CALCULUS WITH ANALYTIC GEOMETRY

The fundamental concepts of mathematics analysis specially that of differential calculus. Fundamental concept of analytic geometry such as lines and conics including their properties and equations are covered. Introduction to limits and continuity, derivatives, and simple applications of derivatives such as curve sketching and maxima and minima problems complete the coverage of the course.

Prerequisite: MATH 105
3 hours lecture a week
Credit: 3 units

MATH 213. CALCULUS FOR BUSINESS

Understanding of calculus as it applies to business, economics and accountancy; topics include limits, continuity, derivatives of polynomial and other algebraic functions, implicit differentiation, higher-order derivatives, extrema, logarithmic and exponential functions, definite and indefinite integrals, and application to business and accounting topics.

Prerequisite: MATH 105
3 hours lecture a week
Credit: 3 units

MATH 215. CALCULUS I WITH ANALYTIC GEOMETRY
The fundamental concepts of mathematical analysis particularly plane analytic geometry and differential calculus: curve sketching, lines, circles and conic sections, limits and continuity, derivatives of algebraic functions, maxima and minima problems, and rectilinear motion.

Prerequisite: MATH 105/MATH 106
5 hours lecture a week
Credit: 5 units

MATH 216 . ANALYTIC GEOMETRY
The fundamental concepts of analytic geometry such as the rectangular coordinate system, lines, circles and conics such as parabola, ellipse and hyperbola and their applications, parametric equations, polar coordinates and curve sketching.

Prerequisite: MATH 105/MATH 106/MATH 107
3 hours lecture a week
Credit: 3 units

MATH 217. CALCULUS I
Fundamentals of calculus: limits, continuity and derivatives. This course assumes a thorough understanding of concepts in analytic geometry and trigonometry. The use of graphing calculators and computer algebra systems is highly encouraged.

Prerequisite: MATH 216, MATH 200
3 hours lecture a week
Credit: 3 units

MATH 218. CALCULUS II
More powerful tools and techniques in obtaining areas and optimal solutions, preferably using graphing calculators, and computer algebra systems.

Prerequisite: MATH 217
4 hours lecture a week
Credit: 4 units

MATH 218a. CALCULUS II
More powerful tools and techniques in obtaining areas and optimal solutions preferably with the use of graphing calculators and computer algebra systems.

Prerequisite: MATH 217
3 hours lecture a week
Credit: 3 units

MATH 220. CALCULUS II WITH ANALYTIC GEOMETRY

Continuation of Calculus I with Analytic Geometry such as mathematical analysis particularly the derivatives of transcendental functions with an introduction to integral calculus; concept in related rates, derivatives of exponential and logarithmic functions, derivatives of trigonometric and inverse trigonometric functions and their applications; parametric and polar equations; differential of a function; partial differentiation; techniques of integration; approximation of definite integrals; curves and surfaces.

Prerequisite: MATH 215
5 hours lecture a week
Credit: 3 units

MATH 221. DIFFERENTIAL CALCULUS
Study of mathematical analysis particularly those on limits and continuity, derivatives of algebraic and transcendental functions such as trigonometric, inverse trigonometric, exponential and logarithmic functions, maxima and minima problems and other applications of derivatives.

Prerequisite: MATH 216
4 hours lecture a week
Credit: 4 units

MATH 225. CALCULUS III WITH ANALYTIC GEOMETRY

Continuation of Calculus II with Analytic Geometry provide engineering and math students with sufficient background on integral calculus with concepts greatly applied in the fields of physics, mechanics and hydraulics; calculus of functions of several variables, sequences, infinite series and power series.

Prerequisite: MATH 220
3 hours lecture a week
Credit: 3 units

MATH 226. INTEGRAL CALCULUS
Integral calculus concepts with applied in the fields of physics, mechanics and hydraulics; covers fundamental integration procedures, definite and improper integrals, application of integration to plane areas and volumes, physics, mechanics and hydraulics; multiple integrals, partial integration, infinite series and hyperbolic functions.

Prerequisite: MATH 221
4 hours lecture a week

Credit: 4 units

MATH 230. DIFFERENTIAL EQUATIONS

Introductory course in ordinary differential equations including first order ordinary differential equations, linear equations with constant coefficients, and variation of parameters, linear equations with constant coefficients, non-homogeneous equations, undetermined coefficients, and variation of parameters, linear systems of equations, the existence and uniqueness of solutions.

Prerequisite: MATH 226/MATH 218a/MATH 225

3 hours lecture a week

Credit: 3 units

MATH 231. DIFFERENTIAL EQUATIONS II

First-order linear partial differential equations, initial and boundary conditions, wave equation, diffusion (heat) equation, boundary problems, Fourier series solutions and Laplace's equations.

Prerequisite: MATH 230

3 hours lecture a week

Credit: 3 units

MATH 234. PLANE GEOMETRY

Study of points, lines and planes, including angles that serve as a springboard for understanding solid geometry and analytic geometry to enhance students' visualization skills and creativity; emphasizes the structure of a mathematical system: the defined undefined terms, postulates, axioms, theorems and corollaries to develop thorough understanding of geometric plane figures, their characteristics and their relationships including parallelism, perpendicularity, congruency and similarity of plane figures to strengthen students' reasoning skills and ability and make convincing arguments and proofs; use of graphing calculators and computer algebra systems.

Prerequisite: MATH 104

3 hours lecture a week

Credit: 3 units

MATH 235. PLANE AND SOLID GEOMETRY

Concepts and skills needed to understand basic geometry principles, axioms, properties and theorems; shapes and figures, and their properties and application in preparation for a course in Analytic Geometry; use of calculators and computer algebra systems.

Prerequisite: MATH 105/MATH 107

3 hours lecture a week

Credit: 3 units

MATH 236. SOLID GEOMETRY

Three-dimensional structures and their constructions measures and analysis of properties to serve as a fundamental course for the study of volume and multivariable functions in calculus, use of graphing calculators and computer algebra systems.

Prerequisite: MATH 234

3 hours lecture a week

Credit: 3 units

MATH 238. MODERN GEOMETRY

Other types of geometries focusing on Euclidean and affine geometry on the plane; Euclidean geometry on the sphere; introduction to finite geometries and to non-Euclidean hyperbolic and elliptic geometries; geometry, linear algebra and abstract algebra.

Prerequisite: MATH 250, MATH 410

3 hours lecture a week

Credit: 3 units

MATH 240. MATHEMATICS OF INVESTMENT

The fundamental theories underlying investment and related business transactions from the mathematics point of view: simple and compound interest and discounts, use of logarithms in computing P or F, equivalent rates, simple annuities, amortization of debts and sinking funds, bonds and their valuation, methods of estimating depreciation changes, and life insurance problems.

Prerequisite: MATH 100

3 hours lecture a week

Credit: 3 units

MATH 245. ELEMENTARY NUMBER THEORY

Theory of numbers in its elementary aspect, with the properties of integers, more particularly with positive integers to include the historical account of the classical number theory such as divisibility theory, diophantine equation, primes and their distribution, theory of congruences, Fermat's theorem, continued fractions, and some number theoretic functions; computational problems to develop basic techniques and test understanding of concepts, practice and constructing proofs.

Prerequisite: MATH 101, MATH 201

3 hours lecture a week

Credit: 3 units

MATH 250. LINEAR ALGEBRA

Matrices, systems of linear equations, vector spaces, linear independence, linear transformations, determinants, eigenvalues and eigenvectors, diagonalization and inner product spaces.

Prerequisite: MATH 101, MATH 201

3 hours lecture a week

Credit: 3 units

MATH 255. SET THEORY AND LOGIC

The rudiments of pure mathematics using logic with language and rules upon which correct reasoning is based so that learner's ability to verify the correctness of argument is developed. Use of set theory as a complex mathematical network apply the skills learned in logic to verify theorems.

Prerequisite: MATH 100

3 hours lecture a week

Credit: 3 units

MATH 260. ADVANCED CALCULUS I

Systematic modern approach to the differential and integral calculus of functions and transformations in several variables; topology of real line, limits, continuity, derivatives, Riemann integrals, improper integrals and sequences.

Prerequisite: MATH 225/MATH 226

3 hours lecture a week

Credit: 3 units

MATH 263. REAL ANALYSIS

Introduction of measure and integration theory: Lebesgue measure and integration over the real numbers like real number system, measurable functions, measurable sets, convergence theorems, integrals of simple and non-negative measurable functions and Lebesgue integral.

Prerequisite: MATH 260

3 hours lecture a week

Credit: 3 units

MATH 265. INSTRUCTIONAL PLANNING AND PROCEDURES IN HIGH SCHOOL MATHEMATICS

A general discussion on basic concepts, methods, and materials used for teaching high school mathematics.

Prerequisite: none

3 hours lecture a week

Credit: 3 units

MATH 270. CURRICULUM PLANNING AND TEACHING OF MATHEMATICS

The important principles, techniques and latest trends in teaching mathematics at any grade level and preparation of instructional materials to insure meaningful mathematics teaching and learning in the elementary.

Prerequisite: none

3 hours lecture a week

Credit: 3 units

MATH 280. CALCULUS FOR BUSINESS ECONOMICS

Elementary concepts and principles of calculus – both differential and integral – with emphasis on how these concepts are applied to business and economics by reviewing of essential pre-calculus topics (solutions of equations, inequalities, lines and graphs), functions, limits, derivatives, integrals and their applications especially to business and economics.

Prerequisite: MATH 100

6 hours lecture a week

Credit: 6 units

MATH 305. HISTORY OF MATHEMATICS

The historical context and discovered approaches which led to the present understanding of the mathematical concepts; use of graphing calculators and computer algebra systems.

Prerequisite: MATH 104/MATH 105

3 hours lecture a week

Credit: 3 units

MATH 310. INSTRUMENTATION IN MATHEMATICS

Training of prospective mathematics teachers to develop visual aids, manipulative materials and models with accompanying activity sheets; improvising instructional devices using available low cost materials while using graphing calculators and computer algebra systems.

Prerequisite: MATH 216, MATH 236

3 hours lecture a week

Credit: 3 units

MATH 311. PROBLEM SOLVING

Exposing future elementary teachers with a holistic experience of mathematical problem solving and investigations such as formulating and posing problems, and solving both routine and non-routine mathematical problems using graphing calculators and computer algebra systems.

Prerequisite: MATH 216

3 hours lecture a week

Credit: 3 units

Credit: 3 units

MATH 312. SEMINAR IN PROBLEM SOLVING IN MATHEMATICS

The different types and levels of problem solving and various strategies for investigation like fundamental tactics in solving; techniques such as looking for a pattern, working backwards, solving a simpler problem, parity, pigeonhole principle, mathematical induction and symmetry; use of graphing calculators and computer algebra systems in problem solving.

Prerequisite: MATH 201/MATH 234

3 hours lecture a week

Credit: 3 units

MATH 315. GRAPH THEORY

Introduction of concepts in graph theory, networks, graph algorithms and their applications.

Prerequisite: MATH 250

3 hours lecture a week

Credit: 3 units

MATH 325. MATHEMATICAL INVESTIGATIONS AND MODELING

Equipping prospective mathematics teachers with skills in developing research-based investigatory projects in mathematics while changing the image of mathematics as a "toolkit" and impressing the view that mathematics is a dynamic and growing body of knowledge and processes; the use of graphing calculators and computer algebra systems in the research project.

Prerequisite: MATH 216

3 hours lecture a week

Credit: 3 units

MATH 326. MATHEMATICAL MODELING.

Introduction of the process of modeling real-world phenomena using the tools of mathematics and computer hands-on sessions.

Prerequisite: MATH 216

3 hours lecture a week

Credit: 3 units

MATH 330. SEMINAR ON TECHNOLOGY IN MATHEMATICS

Use of technology in the mathematics classroom such as calculators and computers in the learning mathematics and its related problems using graphing calculators, and computer algebra systems.

Prerequisite: MATH 216

3 hours lecture a week

MATH 333. ACTION RESEARCH IN MATHEMATICS EDUCATION

Undergraduate research project for students to experience identifying and addressing problems, issues and concerns in mathematics teaching and learning following sound research principles; use of graphing calculators and computer algebra systems in the research project.

Prerequisite: MATH 230

3 hours lecture a week

Credit: 3 units

MATH 400. FUNDAMENTALS OF COMPUTING

Advanced programming concepts and techniques using Java, C++ or other suitable object-oriented programming languages to include topics such as recursion, abstract data types, advanced path structures, programming interfaces, object-oriented programming, inheritance, polymorphism, event handling, exception handling, API programming; computer assisted lectures and discussions.

Prerequisite: COMSCI 100

3 hours lecture a week

Credit: 3 units

MATH 410. ABSTRACT ALGEBRA

Basic algebraic structures, groups, rings, and fields; groups, subgroups, cyclic groups, permutation groups, abelian groups, normal subgroups, quotient groups, homomorphism and isomorphism theorems, rings, integral domains, fields, ring homomorphism, ideals, and field of quotients; enhance the students' skills in constructing mathematical proofs and develop their logical and analytical reasoning.

Prerequisite: MATH 218/MATH 225

3 hours lecture a week

Credit: 3 units

MATH 411. ABSTRACT ALGEBRA II

The course covers rings of polynomials, fundamental theorem of field theory, extension fields, algebraic extensions, finite fields, geometric constructions, fundamental theorem of Galois Theory, illustrations of Galois Theory.

Prerequisite: MATH 410

3 hours lecture a week

Credit: 3 units

MATH 415. COMPLEX ANALYSIS

Introduction to the theory of functions of a complex variable such as complex numbers and their

geometrical representation, analytic functions of a complex variable, elementary functions, power series, Taylor series, Laurent series, residues and poles.

Prerequisite: MATH 260
3 hours lecture a week
Credit: 3 units

MATH 416. NUMERICAL ANALYSIS

Numerical solutions of algebraic and transcendental equations, applications on numerical differentiation and integration, finite differences, separation of symbols, factorial polynomials, interpolation, error analysis numerical differentiation and integration.

Prerequisite: MATH 225, MATH 335
3 hours lecture a week
Credit: 3 units

MATH 430. GENERAL TOPOLOGY

The basic properties of topological, metric and normed spaces, the separation axioms, compactness, the product topology and connectedness to provide good mathematical background for undergraduate students interested in pursuing graduate mathematics courses.

Prerequisite: MATH 230
3 hours lecture a week
Credit: 3 units

MATH 435. OPERATION RESEARCH I (LINEAR PROGRAMMING)

Review of linear algebra, general linear programming problem, simplex computational procedure, duality problem, revised simplex method, degeneracy procedure, parametric linear programming and additional computational techniques.

Prerequisite: MATH 250
3 hours lecture a week
Credit: 3 units

MATH 437. OPERATION RESEARCH II (INTEGER PROGRAMMING)

Introduction to discrete optimization models that deal with the mathematical foundation of integer and combinatorial optimization models, results in integer and combinatorial optimization.

Prerequisite: MATH 435
3 hours lecture a week
Credit: 3 units

MATH 440. THEORY OF INTEREST

This course covers measures of interest, present and future values, equations of value, annuity-certain,

yield rates, extinction of debts, and bonds and securities.

Prerequisite: MATH 215
3 hours lecture a week
Credit: 3 units

MATH 445. ACTUARIAL MATHEMATICS

This course covers mathematical theory of life contingencies involving single-life functions, mortality, life annuities and insurances, and reserves.

Prerequisite: MATH 440
3 hours lecture a week
Credit: 3 units

MATH 498. PRACTICUM

The practicum option requires a 240-hour on-the-job training and a presentation of a special mathematical problem that is built on the on-the-job training experience.

Prerequisite: Senior Standing
3 hours lecture a week
Credit: 3 units

MATH 499a. THESIS I

Activities that include independent reading from mathematical literature and other sources and problem solving; requires preparation/presentation of draft paper on mathematical problem.

Prerequisite: Senior Standing
3 hours lecture a week
Credit: 3 units

MATH 499b. THESIS II

A continuation of Thesis I, which entails presentation of final paper that should contain organized, presentation of a mathematics topic or a solution to a mathematical problem in detailed, coherent and original manner.

Prerequisite: MATH 499a
3 hours lecture a week
Credit: 3 units

PHYS 100. INTRODUCTORY PHYSICS

Concepts and laws of general physics covering the six divisions, namely; mechanics and heat, sound, electricity, magnetism, optics and modern physics; basic principles in physics as applied in life

Prerequisite: MATH 105
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

PHYS 105. MECHANICS AND SOUND

Basic principles of mechanics including inertia, motion, forces and energy, properties and laws of solids and liquids, sound waves

Prerequisite: MATH 105

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

PHYS 106. MECHANICS AND HEAT

Basic principles of mechanics which include vectors, forces, motion, energy, power, simple machines, fluids at rest and fluids in motion; heat theories and temperature measurements; heat capacity, heat transfer; change of phase and basic principle on thermodynamics

Prerequisite: MATH 105

5.5 hrs a week (3 lec, 2.5 lab)

Credit : 4 units

PHYS 110. HEAT AND ELECTRICITY

Heat theories and temperature measurements, effects on the properties of materials and heat flow sources, and the effects; measurements and uses of electricity and magnetism

Prerequisite: PHYS 105

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

PHYS 115. GENERAL PHYSICS

The six divisions of physics, namely; mechanics and heat, sound, electricity, magnetism, optics and modern physics emphasizing on the basic principles of physics applied to life

Prerequisite: MATH 105

5.5 hours a week (3 lec, 2.5 lab)

Credit: 4 units

PHYS 115a. GENERAL PHYSICS

The six divisions of physics, namely; mechanics and heat, sound, electricity, magnetism, optics, and modern physics with emphasis on the basic principles of physics as applied to life

Prerequisite: MATH 105

7 hours a week (2 lec, 5 lab)

Credit: 4 units

PHYS 120. MECHANICS

The conceptual foundations of Newtonian mechanics such as Newton's three laws of motion and their relevant consequences

Prerequisite: MATH 104

5.5 hours a week (3 lec, 2.5 lab)

Credit: 4 units

PHYS 125. PHYSICS FOR HEALTH SCIENCES I

Survey of the concepts and laws of physics in mechanics, heat, electricity, magnetism, optics, relativity, atomic and nuclear physics; practical application, and introduction to instrumentation

Prerequisite: MATH 104

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 unit

PHYS 126. ELECTRICITY AND MAGNETISM

Fundamentals of electricity and magnetism starting from Coulomb's law; electrostatics developed through the concepts of electric field and potential; Gauss' law and its consequences; electronic circuits; Ohm's law, Kirchoffs rules; magnetostatics and magnetic induction leading to Maxwell's equations which unify the theory of electricity and magnetism

Prerequisite: PHYS 120

7 hours a week (2 lec, 5 lab)

Credit: 4 units

PHYS 200. OPTICS

The fundamental concepts of oscillations, waves and optics like simple harmonic motion, mechanical waves, vibrating bodies, acoustics, electromagnetic waves, geometrical and physical optics, and relativity

Prerequisite: PHYS 126

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

PHYS 201. ASTRONOMY

Introduction to the field of astronomy including the current investigations for life on other planets, modern methods of observational astronomy overview of the scientific method, age and origin of the Solar System, descriptions of the planets and discussions of the possibility of life on other planets

Prerequisite: MATH 104

3 hours lecture a week

Credit: 3 units

PHYS 202. BASIC ELECTRONICS

Study of semiconductor devices, P-N junctions, diodes, waveshaping, circuits, transistors, characteristics and hybrid parameters, regions of operations, Ebers-Moll Model, DC and graphical analysis, stability, small signal analysis, amplifier configurations, power amplifiers, classes of operations, heat sinking, DC power supplies, rectifiers, filters, regulators, FET

Prerequisite: PHYS 126

4.5 hours a week (2 lec, 2.5 lab)

Credit: 3 units

Credit: 3 units

PHYS 205. ATOMIC AND MODERN PHYSICS

Basic foundation of quantum theory, atomic structure and spectra the Bohr model, general and special theory of relativity, radioactivity; alpha, beta and gamma decays; introduction to atomic and nuclear physics

Prerequisite: PHYS 206
3 hours lecture a week
Credit: 3 units

PHYS 205a. ATOMIC AND MODERN PHYSICS

Basic foundation of quantum theory, atomic structure and spectra the Bohr model, general and special theory of relativity, radioactivity; alpha, beta and gamma decays; introduction to atomic and nuclear physics

Prerequisite: PHYS 206
7 hours a week (2 lec, 5 lab)
Credit: 4 units

PHYS 206. ELECTRICITY, MAGNETISM and OPTICS

Fundamentals of electricity such as Coulomb's Law, electrostatics, current electricity, electrical power and energy; magnetostatics and magnetic induction leading to Maxwell's equations which unify the theory of electricity and magnetism; fundamental concepts on oscillations, waves, geometrical and physical optics are also included.

Prerequisite : PHYS 106
7 hrs a week (2 lec, 5 lab)
Credit : 4 units

PHYS 206a. ELECTRICITY, MAGNETISM AND OPTICS

Fundamentals of electricity such as Coulomb's Law, electrostatics, current electricity, electrical power and energy; magnetostatics and magnetic induction leading to Maxwell's equations which unify the theory of electricity and magnetism; fundamental concepts on oscillations, waves, geometrical and physical optics are also included.

Prerequisite : PHYS 106
5.5 hrs a week (3 lec, 2.5 lab)
Credit : 4 units

PHYS 207. PHYSICS FOR HEALTH SCIENCES II

Continuation of Physics for Health Sciences I; planning, designing and construction of basic instruments for physics and chemistry laboratory activities

Prerequisite: PHYS 125
4.5 hours a week (2 lec, 2.5 lab)

PHYS 210. MODERN PHYSICS

Introductory course on modern physics starting with introduction on relativity and quantum mechanics from a historical perspective

Prerequisite : PHYS 126
3 hours a week (2 lec, 2.5 lab)
Credit : 3 units

TLE 250. BUSINESS MATHEMATICS

In-depth study of concepts and manipulative skills in arithmetic and generalized arithmetic through a review of basic arithmetic operations, fractions, decimals, ratio and proportion, sets, special products and factoring, linear equations and their applications to business problems

Prerequisite: MATH 100/MATH 102
3 hours lecture a week
Credit: 3 units

PSYCHOLOGY

PSYCH 100. GENERAL PSYCHOLOGY

Contemporary approaches to the analysis of behavior with emphasis on the nature of perception, learning, memory, intelligence, motivation, personality and social psychology in the Philippine setting

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PSYCH 105. INDUSTRIAL PSYCHOLOGY

Application of psychological principles and methods in the selection, placement, evaluation, and motivation of personnel and to problems of human relations in business and industry

Prerequisite: PSYCH 100
3 hours lecture a week
Credit: 3 units

PSYCH 110. DEVELOPMENTAL PSYCHOLOGY

Human development throughout the life span in the areas of physical, social, cognitive, emotional and moral development including the interactive dimensions of human development particularly in the Filipino setting

Prerequisite: PSYCH 100
3 hours lecture a week
Credit: 3 units

PSYCH 115. INTRODUCTION TO COUNSELING

Psychology, history, theoretical framework, approaches, and techniques used in counseling including contemporary issues that influence the counseling profession, such as ethics, assessment, and its relationship with other fields of study

Prerequisite: PSYCH 100
3 hours lecture a week
Credit: 3 units

PSYCH 120. THEORIES OF PERSONALITY

Survey of the major theories of personality and the theoretical and practical issues involved in the scientific study and understanding of personality formation and dynamics

Prerequisite: PSYCH 100
3 hours lecture a week
Credit: 3 units

PSYCH 125. INTRODUCTION TO PSYCHOLOGICAL RESEARCH

Introductory course to social science research in general and psychological research in particular and the research process from the selection of research problem to report writing

Prerequisite: PSYCH 100, STAT 200
3 hours lecture a week
Credit: 3 units

PSYCH 130. SOCIAL PSYCHOLOGY

Study of the individual in a group context focusing on how people think influence, and relate to one another

Prerequisite: PSYCH 100
3 hours lecture a week
Credit: 3 units

PSYCH 135. FILIPINO PSYCHOLOGY

Study of concepts in the field of culture and psychology and of indigenous research methods, giving meaning to psychological reality based on the language and world view of the Filipino to propagate Sikolohiyang Filipino as a discipline and as a movement

Prerequisite: PSYCH 100
3 hours lecture a week
Credit: 3 units

PSYCH 140. PSYCHOMETRICS I

Psychological measurement with emphasis on principles and issues in psychological testing, administration, scoring, and interpretation of

psychological test, and preparation of test protocols and psychometrics and psychological reports

Prerequisite: PSYCH 120, STAT 200
3 hours lecture a week
Credit: 3 units

PSYCH 145. PSYCHOMETRICS II

Administration, scoring and interpretation of test used in various applied fields of psychology, particularly the educational, industrial, and government settings; ethical considerations, current trends and issues in psychological testing in the Philippine setting

Prerequisite: PSYCH 140
3 hours lecture a week
Credit: 3 units

PSYCH 150. GROUP DYNAMICS

Understanding the dynamics of group processes and functioning such as communication, problem-solving, decision-making, leadership/membership, collaboration/competition, and self-awareness using experimental/inductive methods

Prerequisite: PSYCH 130
3 hours lecture a week
Credit: 3 units

PSYCH 155. ABNORMAL PSYCHOLOGY

Development and application of psychological principles and approaches in describing, explaining, predicting, and controlling abnormal behavior, classification, and assessment, types of mental/behavioral disorders and their symptoms, and appropriate interventions or treatment programs

Prerequisite: PSYCH 115, PSYCH 120, PSYCH 130
3 hours lecture a week
Credit: 3 units

PSYCH 160. EXPERIMENTAL PSYCHOLOGY

Philosophy and methods of science focusing particularly on experimental method in the investigation of problems and issues translated to designing and conducting of experiments and subsequent writing of research reports

Prerequisite: PSYCH 125, STAT 240
8 hours a week (3 lec, 5 lab)
Credit: 5 units

PSYCH 165. PSYCHOLOGY OF LEARNING

Introductory course on how humans learn focusing on the different learning theories and their applications; readings on the current researches and findings in classical conditioning, operant conditioning, learned behavior and behavior modification

Prerequisite: PSYCH 100
3 hours lecture a week
Credit: 3 units

PSYCH 170. BIOLOGICAL PSYCHOLOGY

A biological approach to understanding behavior and mental process focusing on the anatomy of the nervous system and other body systems related to human behavior; current findings on the biological basis of emotional responses, sexual behavior, memory and learning, sensory perception and several neurological disorders

Prerequisite: PSYCH 100
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

PSYCH 175. COMMUNITY PSYCHOLOGY

Application of psychological theories in community concerns in both rural and urban settings

Prerequisite: PSYCH 130
3 hours lecture a week
Credit: 3 units

PSYCH 180. COGNITIVE PSYCHOLOGY

Study of human information processing with focus on cognitive neuroscience, attention, language, problem-solving, decision-making, cognitive development and human and artificial intelligence

Prerequisite: PSYCH 165
3 hours lecture a week
Credit: 3 units

PSYCH 185. CURRENT ISSUES IN PSYCHOLOGY

Developments in psychological theory and practice

Prerequisite: Senior Standing
3 hours lecture a week
Credit: 3 units

PSYCH 190. PRACTICUM

A 200-hour work and exposure to different settings such as educational, industrial, government and non-government organizations, hospitals and community where psychology is practiced as a profession

Prerequisite: To be taken after 3rd year
Credit: 6 units

PSYCH 399a. THESIS I

Preparation and defense of the thesis proposal and data collection

Prerequisite: PSYCH 160
3 hours lecture a week
Credit: 3 units

PSYCH 399b. THESIS II

Manuscript/Report writing and defense of the thesis

Prerequisite: PSYCH 399a
Credit: 3 units

SOCIAL SCIENCES

ANTHRO 100. CULTURAL ANTHROPOLOGY

Appreciation of unique cultural identity of people, their ethnicity and origins through ethnographical research focusing on identifying the distinctive material and non-material life ways of population such as social structures, language law, rituals, practices, beliefs, customs, traditions, morals, arts and technologies

Prerequisite: none
3 hours lecture a week
Credit: 3 units

ECON 100. PRINCIPLES OF ECONOMICS WITH LAND REFORM AND TAXATION

Study of the behavior and performance of the economy, the roles and functions of the market, state, households and firms including micro-level supply and demand, elasticity and market structures; the basic law and statutes concerning taxation, land reform, land titles and deeds, and other laws directly affecting agriculture

Prerequisite: none
3 hours lecture a week
Credit: 3 units

ECON 100a. PRINCIPLES OF ECONOMICS

Study of the behavior and performance of the economy, the roles and functions of the market, state, households and firms; some topics in the micro-level such as supply and demand, elasticity and market structures

Pre-requisite : none
3 hours lecture a week
Credit : 3 units

GES 100. GENDER AND ENVIRONMENTAL STUDIES

The basic concepts of gender and environment and the importance and relevance of these to the wholistic development of individuals and society; gender sensitization and environment consciousness raising through activities relative to gender and environment and its relationship with each other in the development process of society in general and the individual in particular

Prerequisite: none
3 hours lecture a week
Credit: 3 units

HIST 100. PHILIPPINE HISTORY

Survey of Philippine history emphasizing the social, economic, political and cultural progress in the Philippines

Prerequisite: none
3 hours lecture a week
Credit: 3 units

HIST 101. PHILIPPINE HISTORY, GOVERNMENT AND POLITICS

HIST 105. FILIPINO NATIONALISM (1872-1898)

Campaign for colonial reforms (political, economics, and social); leaders of the reform movement, strategies within the colony and in Europe; heightened campaign that led to founding of the radical society resulting in the outbreak of the Philippine Revolution in 1896

Prerequisite : HIST 100
3 hours lecture a week
Credit : 3 units

HIST 110. THE U.S. COLONIAL ADMINISTRATION IN THE PHILIPPINES

Circumstances of U.S intervention at the height of the Philippine revolution; motives of U.S occupation; its policies in the economic, political, social, and cultural aspect in the Philippines

Prerequisites : HIST 105
3 hours lecture a week
Credit : 3 units

HIST 115. PHILIPPINE COMMONWEALTH GOVERNMENT (1935-1946)

The transition government where government machineries were handed over to the Filipinos with close supervision of the U.S. colonial officials; social

justice program, domestic and foreign relations; Philippine political, economic conditions during the semi-autonomous government period; the Philippines during the second world war and the Japanese occupation and its impact on the social political lives of the people

Prerequisites : HIST 110
3 hours lecture a week
Credit : 3 units

HIST 120. POST WORLD WAR II PHILIPPINES TO THE PRESENT

The issues on collaboration, rehabilitation at the end of the Second World War Philippines: domestic and international relations/policies; U.S-Philippines "Special relations"; Issue on Rehabilitation and Military Bases Installation; Philippines in the global organization/regional organization including the presidents: from Roxas to present

Prerequisites : HIST 115
3 hours lecture a week
Credit : 3 units

HIST 125. HISTORY OF SOUTHEAST ASIA

Historical development of mainland and islands in Southeast Asia including how and where Ancient Asian Civilization began and its relationship to the growth of the modern Southeast Asian countries; beginning of the campaign for nationhood status and their similar structures of material life, historical and cultural experiences in the light of the regional concept

Prerequisite: HIST 100
3 hours lecture a week
Credit: 3 units

HIST 130. LOCAL/ORAL HISTORY

Study of local history to provide essential data in the making of national history; research methodology using oral data gathering

Prerequisite: HIST 105
3 hours lecture a week
Credit: 3 units

PHILO 100. INTRODUCTION TO PHILOSOPHY

Basic concepts, branches, theories, approaches and development of the disciplines such as survey of the history of philosophy from the ancient Greece to the post-modern era

Prerequisite: none

3 hours lecture a week
Credit: 3 units

PHILO 101. INTRODUCTION TO PHILOSOPHY WITH LOGIC AND CRITICAL THINKING

Basic philosophical issues in the history of philosophy in preparation for the discussion of fundamental logical rules and methods of reasoning necessary to develop critical thinking

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PHILO 103. LOGIC

Survey on the principles and methods of correct reasoning leading to distinction between good and bad arguments; techniques, both formal and informal for developing critical thinking starting with the classic Aristotelian logic to first-order propositional logic and ending with a presentation of the various logical fallacies generally committed in reasoning

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PHILO 105. LOGIC AND ETHICS

Discussion on the basic rules and principles of correct reasoning from Aristotle's term Logic to propositional logic that ends with a survey of contemporary ethical theories

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PHILO 110. SOCIAL PHILOSOPHY

Introductory survey on the different issues on constitutional democracy, justice, human rights, liberty, poverty and health care systems premised after the Rawlsian-contractarian critique on utilitarianism, communitarianism and welfarism

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PHILO 115. PROFESSIONAL ETHICS AND VALUES EDUCATION

Study on the nature and principles of ethics and ethical theories, role of moral judgment and reasoning and its relation and application to ethical values in various professions; theories on values

education as primary basis for moral evaluation and reasoning

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PHILO 120. PHILOSOPHY OF THE HUMAN PERSON

An inquiry into the existence of man and woman as social and political beings, role and relationship with others and society particularly, Philippine society; discussion of representative theories as take points

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PHILO 100. RIZAL'S LIFE WORKS AND WRITING

The significance of the life and writings of Rizal and other heroes on the social, political, and cultural progress of the Philippines.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

PHILO 105. TAXATION AND LAND REFORM

Basic laws and statutes concerning taxation, land reform, land titles and deeds, and other laws directly affecting agriculture.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

POLSCI 100. PHILIPPINE GOVERNMENT AND CONSTITUTION

Introduction to the concepts, branches, theories, principles and approaches of the discipline; issues in politics; public administration and foreign relations with focus on Philippine government, the Philippine Constitution and related laws

Prerequisite: none
3 hours lecture a week
Credit: 3 units

POLSCI 101. PHILIPPINE HISTORY WITH GOVERNMENT AND CONSTITUTION

The historical evolution of Philippine system of governance covering the pre-Spanish Filipino society, the Spanish colonial period, the American occupation and the post-World War II era; impacts and consequences of the historical evolution of the Philippine system of governance to the political, social, cultural and economic awareness of Filipinos who lived in the respective timelines of Philippine history

Prerequisite : none
3 hours lecture a week
Credit : 3 units

POLSCI 105. INTRODUCTION TO POLITICAL SCIENCE
The analytic concepts, processes, and structures of politics including analysis of the individual's political beliefs and actions and the politics of groups, states, and international systems

Prerequisite : POLSCI 100
3 hours lecture a week
Credit : 3 units

POLSCI 110. HISTORY OF POLITICAL THOUGHTS
Survey of political theories that have evolved from Western and Asian political philosophers; classical, neoclassical, liberal and modern political thoughts

Prerequisite : POLSCI 105
3 hours lecture a week
Credit : 3 units

POLSCI 115. COMPARATIVE GOVERNMENT
Comparison of the major government of Europe, Great Britain, Germany and Russia using different analytical frameworks such as structural functionalism, cybernetics, party, theory, and systems approach

Prerequisite: POLSCI 110
3 hours lecture a week
Credit: 3 units

POLSCI 120. INTERNATIONAL RELATIONS
The political and diplomatic relations among states and the dynamics of the worldwide system of states with world politics as a struggle for power

Prerequisite: POLSCI 100
3 hours lecture a week
Credit: 3 units

POLSCI 125. LOCAL GOVERNMENT
Public policy and local government administration and basic concepts in local governance including the local government code and its implementation

Prerequisite: POLSCI 100
3 hours lecture a week
Credit: 3 units

POLSCI 130. PARLIAMENTARY PROCEDURES AND PRACTICES
Basic parliamentary procedures and practices which include application of the rules of order and table of motions in the preparation of bills, ordinances, resolutions, committee reports, minutes and other organizational documents

Prerequisite: none
3 hours lecture a week
Credit: 3 units

SOCIO 100. SURVEY OF SOCIAL THEORIES
Theories of societies developed in the disciplines of anthropology and sociology in the 19th and 20th century with a discussion on the theorists within their historical millennium as well as their contribution to the social sciences.

Prerequisite : SOCSCI 100
3 hours lecture a week
Credit : 3 units

SOCIO 105. PHILIPPINE SOCIAL SYSTEM
Analysis of the social structures of Philippine society to include sociological analysis of the Philippine social order and focus on the basic components of the Philippine socio-cultural system, namely; population, cultural map, material products of culture, social structure while tracing how these factors influence the life and identify formation of the Filipino people

Prerequisite: SOCIO 100
3 hours lecture a week
Credit: 3 units

SOCIO 110. DYNAMICS OF SOCIAL CHANGE
Factors influencing social change – its direction, rate and degree, its consequences, major trends and developments; the case studies of social and cultural change; the change and development as main focus of assigned readings and class discussions

Prerequisite: SOCSCI 100
3 hours lecture a week
Credit: 3 units

SOCIO 120. THE PHILIPPINE SOCIAL SYSTEM
Analysis of the social structures of Philippine society

Prerequisite : SOCSCI 100
3 hours lecture a week
Credit : 3 units

SOCSCI 100. SOCIETY AND CULTURE WITH FAMILY PLANNING
Introduction to the basic concepts of sociology and anthropology stressing humankind's interrelationship with each other and its environment; study of culture, family planning, and social change.

Prerequisite: none
3 hours lecture a week
Credit: 3 units

SOCSCI 105. COMMUNITY DEVELOPMENT, FAMILY RELATIONS, AND POPULATION EDUCATION

Analysis and perspectives, problems, issues, approaches/immersion, strategies of the Philippine community development programs including family relations, and population education

Prerequisite : SOCSCI 100

3 hours lecture a week

Credit : 3 units

SOCSCI 110. GENDER STUDIES

Examination and analysis of socio-cultural constructions and dynamics of gender relations; root causes of various gender issues and alternative perspectives

Prerequisite : SOCSCI 100

3 hours lecture a week

Credit : 3 units

SOCSCI 195. INTRODUCTION TO SOCIAL SCIENCE RESEARCH

Introduction to social science research and research processes from the selection of research problem to report writing

Prerequisite: STAT 200, Senior Standing

3 hours lecture a week

Credit: 3 units

SOCSCI 200. THESIS

SOCSTUD 200. BASIC GEOGRAPHY I

The earth's surface and its physical and natural attributes, and its relation to society and development

Prerequisite: none

3 hours lecture a week

Credit: 3 units

SOCSTUD 205. WORLD HISTORY AND CIVILIZATION I

The social, political and economic history of the world from ancient times to the present; the major contributions of great civilizations; the emergence of nations, geographical and industrial discoveries and other elements/factors that have shaped contemporary way of life.

Prerequisite: HIST 100

6 hours lecture a week

Credit: 6 units

SOCSTUD 210. LAW AND RELATED STUDIES

Selected laws of the country that have practical application in the individual's exercise of their functions at home, in the school, community and work place such family law, labor law, environmental law, human rights, public accountability, consumer law and common offenses.

Prerequisite : POLSCI 100

3 hours lecture a week

Credit : 3 units

SOCSTUD 215. BASIC GEOGRAPHY II (PLACES AND LANDSCAPES IN A CHANGING WORLD)

Overview of the diversity of interconnections of people and places in a globalizing world as mediated by cultures, politics and historical developments

Prerequisite : SOCSTUD 200

3 hours lecture a week

Credit : 3 units

SOCSTUD 220. WORLD HISTORY AND CIVILIZATION II

A study of the age of scientific, political, social and economic changes that has brought about modern civilization including modern conflicts and their causes.

Prerequisite : SOCSTUD 205

6 hours lecture a week

Credit : 6 units

SOCSTUD 225. TRENDS AND ISSUES IN SOCIAL STUDIES

Peace, global and environmental issues, human rights, gender, multicultural issues in the national and global context

Prerequisite: none

3 hours lecture a week

Credit : 3 units

SOCSTUD 230. GEOGRAPHY AND NATURAL RESOURCES

A study of the basic geographic features and regions of the Philippines to enable students to understand the different physical and cultural processes that were instrumental in shaping the country

Prerequisite: SOCSTUD 200

3 hours lecture a week
Credit : 3 units

SOCSTUD 235. ASIAN STUDIES

The political, economic and socio-cultural issues in Asian societies today in the light of historical and global forces at work in Asia.

Prerequisite: SOCSTUD 205, 220
3 hours lecture a week
Credit : 3 units

SOCSTUD 240. COMPARATIVE GOVERNMENT AND POLITICS

Study of five selected models of political systems in to government structure, organization, function, operation and politics

Prerequisite : POLSCI 100
3 hours lecture a week
Credit : 3 units

SOCSTUD 245. BUILDING APPROACH ACROSS THE SOCIAL SCIENCES DISCIPLINES

Varied presentations of integrative and interactive activities utilizing the thematic approach to instruction of two or more Social Science disciplines.

Prerequisite : none
3 hours lecture a week
Credit : 3 units

SOCSTUD 250. MICRO-MACRO ECONOMICS

The basic concepts of micro-economics and the nature and scope of production, basic economic theories and macro-economics such as economic growth and development, unemployment and inflation, monetary and fiscal policies, international trade, related theories, and issues of development.

Prerequisite : ECON 100
3 hours lecture a week
Credit : 3 units

SOCSTUD 255. ECONOMICS PLANNING AND STRATEGY

Survey of the development strategies of developed economies, such as USA, Japan, China and developing countries like Philippines, Thailand and Malaysia in search for a model economy to solve the problems of poverty, resource degradation, lack of urban planning, unemployment, deficit fiscal policies, economic dependency and related issues

Prerequisite : SOCSTUD 250
3 hours lecture a week
Credit : 3 units

SOCSTUD 260. SOCIO-CULTURAL ANTHROPOLOGY

The origin of people and their communities emphasizing the concepts that are interrelated and unified by understanding the development of society and culture

Prerequisite : SOCSCI 100
3 hours lecture a week
Credit : 3 units

SOCSTUD 265. TEACHING APPROACHES IN SECONDARY SOCIAL STUDIES

Innovative approaches, strategies and techniques in teaching and learning Social Studies

Prerequisite : none
3 hours lecture a week
Credit : 3 units

SOCSTUD 270. PRODUCTION OF SOCIAL STUDIES INSTRUCTIONAL MATERIALS

Varied opportunities for students to engage in systematic planning of instructional materials in the different Social Science disciplines utilizing appropriate objectives and teaching strategies for a given content of instruction.

Prerequisite : none
3 hours lecture a week
Credit : 3 units

SOCSTUD 275. SCIENTIFIC REASONING AND CRITICAL THINKING

Methodological components of the Social Sciences as tools in explaining certain phenomena and the understanding of logical reasoning and critical thinking

Prerequisite : PHILO 110
3 hours lecture a week
Credit : 3 units

SOCSTUD 280. ASSESSMENT AND EVALUATION IN SOCIAL SCIENCES

Use appropriate formal and informal assessment and evaluation tools in the different Social Science disciplines.

Prerequisite : none
3 hours lecture a week
Credit : 3 units

SOCSTUD 285. RESEARCH IN SOCIAL SCIENCES

The development of competence and skill in research methodology through exposure to

different Social Science research models and techniques.

Prerequisite :
3 hours lecture a week
Credit : 3 units

WS 100. INTRODUCTION TO WOMEN STUDIES

Introduces women's contributions in all aspects of life, e.g., social, political, economic; spiritual, environmental, historical, discussion and analysis of women's role, nature, and sexuality

Prerequisite: None
3 hours lecture a week
Credit: 3 units

DEPARTMENT OF STATISTICS

STAT 100. DESCRIPTIVE STATISTICS

Present importance of statistics, the basic mathematical and measurement concepts, methods of collection, organization and pictorial presentation of data, frequency distribution, measures of central tendency, measures of variability, normal curve and standard scores, and introduction to relationship studies

Prerequisite: MATH 100
3 hours lecture a week
Credit: 3 units

STAT 105. BASIC STATISTICAL METHODS

Thorough discussion on the analysis of measurements and discrete data, non-parametric methods, simple linear regression and correlation analysis, analysis of variance and covariance

Prerequisite: STAT 100
4.5 hours a week (2 lec, 2.5 lab)
Credit: 3 units

STAT 110. MATHEMATICAL STATISTICS

Different mathematical concepts as applied to statistics such as transformations, infinite series, inequalities, generating functions and some special functions

Prerequisite: MATH 215
3 hours lecture a week
Credit: 3 units

STAT 115. MATRIX THEORY

The fundamental concepts, matrices and vector spaces such as algebra of matrices, vector spaces and subspaces, basis and dimensions, linear operations and transformations, determinants, characteristic equations and eigenvalues

Prerequisite: MATH 100
3 hours lecture a week
Credit: 3 units

STAT 120. PROBABILITY THEORY I

Thorough discussion on the elementary concepts of permutations and combinations, probability and probability distributions of random variables, and its properties; discrete probability models; continuous probability models; joint and conditional distributions; distribution of functions of random variables and probability integral transform for discrete and continuous random variables

Prerequisite: STAT 110 for BSStat STAT 200 for BS Math

3 hours lecture a week
Credit: 3 units

STAT 125. PROBABILITY THEORY II

Sampling and sampling distributions, point estimation, confidence intervals, tests of hypothesis such as most powerful test, loss function, generalized likelihood ratio test and most powerful test

Prerequisite: STAT 120
3 hours lecture a week
Credit: 3 units

STAT 130. COMPLETE BLOCK DESIGNS

Principles of experimental designs like CRD, RCBD, Latin Square design, factorial experiments arranged in CRD, RCBD, Latin Square and different multiple comparison among means, group and trend comparisons and analysis of covariance

Prerequisite: STAT 105
3 hours lecture a week
Credit: 3 units

STAT 135. REGRESSION ANALYSIS

Relationship of random variables using the simple linear regression, multiple, polynomial regression, non-linear regression, correlation analysis and methods of model selection

Prerequisite: STAT 105
3 hours lecture a week
Credit: 3 units

STAT 140. SAMPLING THEORY

The different theories of sampling and sample surveys including simple random sampling, stratified sampling, systematic sampling, unequal probability sampling, cluster sampling, and methods of estimation

Prerequisite: STAT 120

3 hours lecture a week Credit: 3
units

most powerful tests, unbiasedness, invariance and
Bayesian point and interval estimation

STAT 145. CATEGORICAL DATA ANALYSIS

The various methodologies and analysis of categorical or frequency count data to include test of the goodness of fit, test for independence, contingency tables, log-linear analysis, logit analysis and other cross-classified data analysis

Prerequisite: STAT 105
3 hours lecture a week
Credit: 3 units

Prerequisite: STAT 125
3 hours lecture a week Credit: 3
units

STAT 175. TIME SERIES ANALYSIS AND FORECASTING

Different methods of forecasting technique such as exponential smoothing, moving average, stationary stochastic processes, covariance, auto-correlations, AR, MA, ARMA process, ARIMA process, and an introduction to spectral density analysis

Prerequisite: STAT 120
3 hours lecture a week
Credit: 3 units

STAT 150. STATISTICAL COMPUTING

Use of various software packages and its application to statistical computing to include software packages to be used such as SPSS, SAS and other statistical software packages

Prerequisite: STAT 105, COMSCI 100
3 hours lecture a week
Credit: 3 units

STAT 180. MULTIVARIATE METHODS

Multivariate normal population; multivariate of tests of hypothesis such as discriminant analysis, principal component analysis, factor analysis, MANOVA and other related topics

Prerequisite: STAT 120
3 hours lecture a week
Credit: 3 units

STAT 155. SURVEY OPERATIONS

Planning, execution and analysis of surveys including procedures on the use of sampling with and without replacement, sampling with equal allocation and sampling proportional to size

Prerequisite: STAT 140
3 hours lecture a week
Credit: 3 units

STAT 200. INTRODUCTION TO STATISTICS

Basic principles of statistics useful in any academic disciplines including the nature and scope of statistics, frequency distribution and measures of central tendency and dispersion; the basic concept of probability theory and the different steps in testing hypothesis

Prerequisite: MATH 100
4.5 hours a week (2 lec, 2.5 lab) Credit: 3
units

STAT 160. PARAMETRIC STATISTICS

Different parametric statistics with emphasis on various special parametric families of univariate and multivariate statistics as well as different sampling distributions and other order statistics

Prerequisite: STAT 120
3 hours lecture a week
Credit: 3 units

STAT 205. EXPERIMENTAL DESIGNS

Principles of experimental designs like complete block designs and factorial experiments

Prerequisite: STAT 200
4.5 hours a week (2 lec, 2.5 lab) Credit: 3
units

STAT 165. NON-PARAMETRIC STATISTICS

Non-parametric distribution functions or distribution free functions with emphasis on inferences concerning a cumulative distribution, quantiles, tolerance limits and equality of two or more distributions including survival data analysis

Prerequisite: STAT 155
3 hours lecture a week
Credit: 3 units

STAT 210. EXPERIMENTAL DESIGNS FOR FOOD SCIENCE

Principles of experimental designs like complete block designs and factorial experiments

Prerequisite: STAT 200
4.5 hours a week (2 lec, 2.5 lab) Credit: 3
units

STAT 170. STATISTICAL INFERENCE

Statistical inference and statistical decision theory, decision tree construction and analysis, sufficiency,

Prerequisite: MATH 104
3 hours lecture a week
Credit: 3 units

STAT 220. STATISTICS APPLIED TO BUSINESS

The different theories and methodologies in statistical analysis commonly used in business such as sampling, measures of central tendency and variability; probability distributions; tests of hypothesis; correlation and regression

Prerequisite: MATH 105
3 hours lecture a week
Credit: 3 units

STAT 225. STATISTICS AND PROBABILITY

Probability theory like probability distribution, tests of hypotheses, analysis of enumeration data, linear regression and correlation

Prerequisite: MATH 105
3 hours lecture a week
Credit: 3 units

STAT 235. QUANTITATIVE TECHNIQUES IN BUSINESS

The quantitative methods for decision making such as linear programming models and other special algorithms, break-even point analysis, inventory and production models; decision making process under certainty, uncertainty and at risk; decision tree construction and analysis; network models; business forecasting and time series analysis

Prerequisite: STAT 220
3 hours lecture a week
Credit: 3 units

STAT 240. STATISTICS FOR SOCIAL SCIENCES

More advanced statistical concepts and techniques such as those applied in the social sciences focusing on analysis of variance, Duncan's Multiple Range Tests, multiple regression and correlation, and selected non-parametric tests

Prerequisite: STAT 200
3 hours lecture a week
Credit: 3 units

STAT 245. STATISTICS FOR BIOLOGY

Basic concepts and principles of descriptive and inferential statistics with application to the field of biology such as random variables, probability distributions and sampling distributions; probability distributions such as normal, t, F and chi-square; appropriate statistical procedures for biological research such as the analyses of variance, regression and correlation

STAT 246. STATISTICS FOR PHYSICAL SCIENCES

Basic concepts and principles of descriptive and inferential statistics with application to the field of physical sciences that include random variables, probability distributions and sampling distributions; probability distributions such as the normal, t, F and chi-square; appropriate statistical procedures for physical science research like analysis of variance, regression and correlation

Prerequisite: MATH 104
3 hours lecture a week
Credit: 3 units

STAT 247. ADVANCED STATISTICS

Basic concepts in the design of experiments analysis of variance and linear regression; applications and data analysis with computations carried out using SPSS; use of graphing calculators and computer algebra system

Prerequisite: none
3 hours lecture a week
Credit: 3 units

STAT 250. INCOMPLETE BLOCK DESIGN

Analysis of nested experiments, confounding, factorial experiments with main effects confounded, incomplete block designs, lattice designs and field plot techniques

Prerequisite: STAT 130
3 hours lecture a week
Credit: 3 units

STAT 255. LINEAR MODELS I

Multi dimensional normal distribution, distribution of quadratic forms, full rank models, estimation and tests of hypothesis

Prerequisite: STAT 115 & STAT 120
3 hours lecture a week
Credit: 3 units

STAT 260. LINEAR MODELS II

Linear models not of full rank, experimental design models, and component, of variance models

Prerequisite: STAT 255 lecture
Credit: 3 units

STAT 265. STOCHASTIC PROCESS

Classification and Characterization of stochastic processes, Chapman-Kolmogorov equations, limiting probabilities, branching process, time reversible Markov Chains, Brownian motion, Poisson process, birth and death process, renewal process and introduction to queuing theory

Prerequisite: STAT 125

3 hours lecture a week

Credit: 3 units

STAT 398. SEMINAR

Presentation and discussion of special topics and research results in statistics with student participation in preparing and presenting materials

Prerequisite: Graduate Standing or Seniors
by Petition

1 hours lecture a week Credit: 1

unit

STAT 399a. PRACTICUM

Individualized assignment arranged with an agency business, or other organization to provide guided experience in the field

Prerequisite: Junior Standing and Approval
of Department Chair

Credit: 3 units

STAT 399b. SPECIAL PROBLEMS IN STATISTICS

Presentation and discussion of special topics and research results in statistics; student participation in preparing and presenting materials

Prerequisite: Graduate Standing or Seniors
by Petition

Credit: 3 units