

## FALL 2025 TENTATIVE COURSE OFFERINGS\*

The American College of Thessaloniki plans to offer a wide array of courses from the Divisions of Business, Humanities & Social Sciences, and Technology & Science for the Fall 2025 semester. For those students in the Study Abroad Program, prerequisite requirements can be waived if comparable completed coursework at their home institution can be demonstrated.

\*Please note that ACT reserves the right to cancel a class due to low enrollment and will work to provide appropriate alternatives for those students impacted by any changes in course offerings.

### DIVISION OF BUSINESS

#### **Accounting 101: Financial Accounting**

*This course is designed to provide students with an understanding of accounting information and the environment in which it is developed and used. Accounting principles and procedures are discussed in order to provide an understanding of the financial accounting process, including the recording, summarizing, and reporting of business transactions, which result in the preparation of financial statements. Topics covered include accounting and the business environment, revenue and cost recognition, asset valuation, depreciation, and an introduction to financial statement analysis. (3 credits)*

#### **Accounting 102: Managerial Accounting**

*This course is designed to give insight into the interpretation and use of financial reports for management planning, coordination and control. Students will be exposed to the kind of accounting information needed, where this information can be obtained, and how this information can be used by managers as they carry out their planning, controlling, and decision-making responsibilities. Topics include management accounting vs. financial accounting, classification and behavior of costs, CVP analysis, segmented reporting, standard costing and responsibility accounting. (3 credits)*

#### **Business Administration 240: International Business Law**

*The aim of the course is to introduce students to business law in the international environment. The course will cover the following topics: the formation of contracts, performance and non-performance of contracts, breach of contracts, a detailed analysis of commercial supply contracts, international sales and transactions, intellectual property, as well as commercial dispute resolution. The course will also reflect on different ethical dilemmas that businesspersons face today in the global society. It will also cover issues relating to different forms of getting incorporated and labor law (3 credits)*

#### **Business Administration 398: Undergraduate Internship in Business**

*This course aims towards junior or senior students so as to offer them an opportunity to apply their so far gained academic knowledge. This internship is an academic course and credit is awarded due to learning not just for working. The course's main goal is to provide students with an opportunity to gain work experience that will enhance and complement their academic learning. The course requirements are designed to provide a structure that will enable students to make connections between what they learn in the classroom and on the job, to further develop analytical and interpersonal skills, and to practice business writing skills. (3 credits)*

#### **Economics 101: Introductory Macroeconomics**

*An introduction to modern economic analysis and its policy implications. The course centers on the applications of economic theory to national policy problems such as growth, inflation, unemployment, government expenditures and taxation, and the role of money. In addition, it provides a broad introduction to the understanding of the modern national socioeconomic systems in today's globalized economies. (3 credits)*

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## **Economics 102: Introductory Microeconomics**

*A continuation of the introduction to modern economic analysis concentrating on the factors affecting behavior and decision-making by households, business firms, and institutions operating under a mixed socioeconomic system. It also considers the issues of market failures and introduces basic concepts of international economics. (3 credits)*

## **Finance 201: Financial Management**

*This course provides a comprehensive introduction to the field of financial management. Emphasis is given to the examination of the processes and the methodology of financial statement analysis that can be applied and used as guidelines in assessing, interpreting and planning financial data to meet the objectives of managing a business entity effectively. Topics covered include goals and functions of financial management, short-term financial management decisions, financial statement analysis, planning and financial forecasting, and time value of money. (3 credits)*

## **Finance 232: International Finance**

*This course, designed for students who wish to build upon the basic economic and financial principles they have acquired in the areas of economics and corporate finance, covers both the management and the markets of multinational and European businesses. Students are exposed to the international business environment, with emphasis on the challenges financial managers face in the dynamic and rapidly expanding field of international and European finance. More specifically, students thoroughly examine recent developments in the following areas: financial management of an internationally-oriented business, international financial markets, multinational capital structure and the cost of capital, hedging of exchange rate movements and financing of international trade, and the international banking environment. (3 credits)*

## **Management 101: Introduction to Management**

*This course provides students with knowledge of basic management theories and concepts and introduces them to simple case studies relevant to the theoretical background that is covered. The subjects examined, including some insights from international management, are the following: the external and internal environment within which an organization operates; the historical foundations of Management; the social responsibility of business and the relation between business and government; the managerial function of planning; management by objectives; the organizing function and organizational structures; the function of staffing and personnel selection; the function of leading, motivation and job satisfaction, and finally, the function of controlling and coordinating a firm's actions to achieve its objectives. (3 credits)*

## **Management 201: Organizational Behavior**

*The behavior of individuals and groups within the organizational context is presented and analyzed. Different forms of organizational behavior are considered, providing students with exposure to various models. Topics covered include the context of organizational behavior, organizational culture, understanding individual behavior, personality-perception attitudes, job satisfaction, job stress, motivation and learning, interpersonal behavior and dynamics, leadership, power and politics. (3 credits)*

## **Management 203: Hospitality Management**

*Hospitality is a concept deeply rooted into Greek mentality. Intuitive hospitality is offered by all tourism professionals and the country is renowned for this quality. Nevertheless, contemporary developments and cultural trends make it necessary for professionals to be educated according to today's needs. This course covers a wide range of topics that include advance hospitality management theory, impact of socio-economics and technology on hospitality, the future trends, laws relating to business ownership, current practices, legislation and ethics in hospitality practices, operations of revenue, logistics in accommodation for guests, guest handling, and various segments such room, concierge, food and beverage, pools, casinos, beach-bars and restaurants. (3 credits)*

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### **Management 219: Entrepreneurial International Business**

*The objective of this course is to present an overview of the global environment within which firms operate. Students are exposed to all aspects of international business and will learn how to interpret international developments and evaluate their consequences for the firm. Among the topics considered are the nature of the multinational corporation, the institutional framework for international business, environmental factors influencing the choice of international investment sites, factors related to business operations in specific countries/regions, and the special circumstances relating to the marketing and financing of international businesses. (3 credits)*

### **Management 303: Events Management**

*This course will provide industry-specific knowledge of events planning and running. It will offer a comprehensive overview of events management, covering all types of event destinations, venues and operations. Specific attention is paid to the analysis, management and monitoring of the economic and tourism benefits of the events sector. Topics that will be covered include event management, planning, operations, logistics, quality management, coordination of HR, financial management and marketing of events, communications, and evaluation and impact assessment methods. Participants will also be given a wide range of event studies in order to learn from prior industry experience. (3 credits)*

### **Management 312: Operations Management**

*The course provides an overview of concepts, methodologies and applications of production and operations management. Topics include productivity, forecasting demand, location and capacity planning, inventory control, project management, operations scheduling, just-in-time systems, quality control, total quality management. (3 credits)*

### **Management 322: Business Strategy**

*The aim of this course is to enable students to approach the whole organization: marketing, finance, accounting and personnel functions together. Strategy and structure are the central themes of the course. Topics covered include the business environment, the systems approach, industry analysis, organizational intelligence, organizational structuring, organizational power, strategy development and implementation, leadership styles, management of the external environment, and strategic decision-making. (3 credits)*

### **Management 323: Business Strategy II (Capstone Project)**

*This course is designed to synthesize the knowledge and skills developed in previous business courses and apply them to the research project. Students learn about all aspects of the process of developing and carrying out their business strategy research project, and gain an understanding of standards and expectations that students need to meet to be successful in completing their research. Typically, there are no classroom sessions throughout the course. However, in order to make substantial progress, it is essential that students set and meet aggressive goals and meet regularly with their coordinator to ensure the research project is progressing in a focused and high quality manner. Lastly, this research project should prove the student's independent ability to investigate and develop an issue within the field of business strategy. (3 credits)*

### **Marketing 101: Introduction to Marketing**

*The objectives of this course are to introduce the basic marketing concepts, to present the practical use of marketing in modern corporations, to provide students with the elements of market thinking in solving business problems and to prepare them for working in the competitive and dynamic field of marketing. Topics covered include the macro and micro role of marketing, market segmentation, basic principles of marketing research, demographic and behavioral dimensions of consumers, marketing mix, product analysis, product strategies, new product development, distribution channels, pricing policies, introduction to promotion and advertising, and marketing plan construction. The course is enriched with supplementary up-to-date articles, real-world cases, video projections, and marketing simulation. (3 credits)*

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### **Marketing 200: Principles of Public Relations**

*The course introduces students to the theories and techniques involved in planning and carrying out appropriate programs in order to influence public opinion and behavior. The students will receive a comprehensive knowledge of Public Relations, public opinion, public practices and problem solving and prevention. (3 credits)*

### **Marketing 201: Tourism Marketing**

*Marketing plays a catalytic role in international tourism. Customers are offered today an enormous selection of choices worldwide, while tourism professionals try to distinguish themselves from competition. This course will initially offer general marketing education and then focus in industry-specific applications of marketing. Topics to be covered include the characteristics of a service, their marketing implications, an overview of mix components – product, price, promotion, place, people -, the independence and interdependence of elements, definitions of market segmentation, marketing for hotels and resorts, the product life cycle, the scope, process and role of market research, and secondary information, sources, range and importance. Professional expertise will be brought into class together with case studies of marketing practices. (3 credits)*

### **Marketing 324: E-Marketing**

*This course focuses on the key marketing issues in E-Business, comparing marketing concepts in the traditional marketing environment with those employed in E-Business. Topics addressed include Marketing Research on the Web, Personalization/Online Community, Pricing Online, Customer Support and Online Quality, E-Commerce, Business to Business (B2B) Marketing, Advertising/Brand Building, Web Promotion, and "Virtual Legality".(3 credits)*

### **Marketing 330: Consumer Behavior**

*An analysis of consumer behavior, this module introduces students to the processes that consumers employ in order to select, purchase, use, evaluate, and dispose of products and services that will satisfy their needs. The module will also provide students with an understanding of the influences (external and internal) that determine consumer behavior. And, since consumers vary in the ways that they consume products and services, the module will demonstrate in various ways how and why the analysis of consumer behavior is critical to the field of (3 credits)*

## **DIVISION OF HUMANITIES & SOCIAL SCIENCES**

### **Art 120: Art Appreciation: Principles of Design**

*The purpose of this course is to introduce students to the general principles of design, that is, to the formal elements in any work of visual art (painting, sculpture, photography, film, contemporary installation art, etc.). The course will be thematic and topical, and will consider examples from all periods of Western and non-Western Art. Included in the formal course work will be visits to local museums and galleries to examine firsthand artworks illustrating the different principles studied. (3 credits)*

### **Communication 215: Foundations of Contemporary Media**

*The course aims to acquaint students with the foundations of mass communication and the technological and social dynamics that have shaped their evolution. It will help students gain a better understanding of the evolving media landscape, the role of media industries, the effects of technological breakthroughs, and the ethical, political, and legal debates related to the media. It focuses on the fundamental socio-historical development in the media, both at the level of their role as industrial and cultural institutions, and in the light of the ethical and legal terms of their operation. Special attention is given to the most recent of technological breakthroughs in media development, i.e., the digital revolution, and to its transformative consequences over the whole of the media/cultural industry landscape. (3 credits)*

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### **Communication 317: Communicating Through New Media**

*The course offers a broad in-depth introduction to theories of the new media as well as the impact and influence of the new media on various aspects of socio-cultural life, including journalism, art, identities, politics, social issues, and so on. Overall, it adopts an applied approach by examining the various socio-cultural aspects of the new media in concrete settings and thus aims to provide students with an understanding of the crucial changes that most socio-cultural sectors have undergone due to the evolvement of new media. (3 credits)*

### **Communication 327: Research Methods and Practice**

*In this course students are given the opportunity to develop an understanding of the major approaches in Humanities and Social Sciences regarding the design of research as well as data collection and analysis. It is a crossover that links to all courses in the curriculum that require either critical understanding of or engaging in research and of paramount importance to the thesis modules. The course is designed to provide students with research skills which are in high demand in a variety of contemporary professional settings, and necessary for their academic advancement to a graduate degree. It will discuss various research methods and in each of the methods studied, the aim is to focus on its practical applications and uses, examine in depth notable cases of published research, and appraise their social utility. (3 credits)*

### **English 101: Composition I**

*This course reviews the basic principles of paragraph writing and introduces the major rhetorical modes of narration, description and exposition through discussion of theory, examination of model essays, and writing practice. In addition, students are introduced to information literacy by spending seven two-hour sessions in the library, developing effective search strategies, understanding the differences between types of resources, and using critical skills with which to evaluate resources. (3 credits)*

### **English 120: Introduction to Literature**

*The purpose of this course is to introduce students to the literary genres of poetry, prose fiction and drama, and to familiarize them with a variety of literary techniques specific for the analysis of each genre. Students read a selection of classic and contemporary works within these genres and engage in analysis of narrative, study key poetic techniques that make meanings happen and discuss performance possibilities as part of an attempt to become better readers and a more critical audience. The course will also cultivate students' creative skills, thus enhancing their overall writing abilities and helping them become more conscious writers. Students also gain an enhanced aesthetic appreciation of literature as art and come to value its role in education and everyday life. (3 credits)*

### **English 203: Advanced College English Skills**

*This course aims to enhance academic skills in listening, speaking, reading and writing as well as develop significant critical thinking and research skills essential in an academic community and beyond. Texts on contemporary issues from various disciplines including newspaper articles, autobiographies, essays and peer reviewed journal articles will be examined. Close reading of texts will be the basis for discussions, debates, exercises and written assignments. Podcasts, blogs and short videos will also be used to practice Academic English skills. Themes and skill areas are selected to complement and enrich the learning experience of students of all fields. (3 credits)*

### **English 224: Post World War II British and American Drama**

*The course aims to introduce students to the systematic study of different kinds of drama by British and American playwrights from the period after the Second World War up until the start of the 21st century. It further aims to enhance their capacity to understand and think analytically about dramaturgy; to recognise the importance of the conventions of drama in the construction of meaning; to further develop their literacy skills so that they will be more critical and responsive readers and more exact and confident writers; to improve students' understanding of drama as both a literary and a performance medium and the connection between the two; and to introduce students to the synergy between dramatic texts and developments in theatrical practice, and how each informs and shapes the other. (3 credits)*

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## **English 230: British Literature and Culture**

*This is a standard survey course that guides students to the study of British literature in a more historical and culturally contextual fashion. This course aims to help students explore the interface of literature and society, and to provide them with appropriate tools for more advanced contextualized literary study. Students will learn to contextualize individual texts, recognize literary trends and cultural modes, evaluate literary and social movements, and be able to follow and discuss the evolution of British literature from the age of Chaucer within each cultural frame. While the focus of the course is primarily on so-called canonical writers and texts, class discussions and overarching critical perspectives look beyond such classifications. (3 credits)*

## **English 250: Advanced Writing & Professional Communication**

*The purpose of this course is to provide instruction and practice in the skills and strategies necessary to produce effective written and oral communication in any professional context. The course addresses topics such as persuasive writing techniques, formal professional communication (including executive summaries, legal documentation, letters and reports) as well as intercultural communication, professional writing in the 'e-world' and advanced public communication writing & speaking skills. The course is designed to foster skills development in the areas of critical thinking, presentation techniques, application of accepted professional frameworks to new ideas and use of innovative writing, with the aim of preparing students for realistic professional situations. (3 credits)*

## **English 390: Senior Thesis I**

*This is the first part of a course in which the students are required to write an 8,000-word thesis. It forms a fundamental component of the BA Hons English curriculum, serving both its pathways, which offers students the opportunity to cultivate the abilities and skills necessary for the realization of a medium-scale research project, from the formulation of the initial research question to its final submission. Combining what is often encountered as either final year Dissertation or Advanced Research & Writing Skills, the course offers an integrative, hands-on and project-focused approach deemed particularly useful both to a wide variety of professional settings and to the advancement to graduate studies. (3 credits)*

## **Greek 101: Beginning Modern Greek I**

*The aim of this course is to develop students' familiarity with oral and written Greek through dialogues dealing with everyday situations and written material drawn from the popular media. Emphasis is on oral communication. Grammar is learned through dialogues illustrating everyday communication, while students gain practice by role-playing and acting out numerous everyday situations. The vocabulary used meets basic social needs for an environment where Greek is spoken. (3 credits)*

## **History 120: The Modern World**

*This course takes its point of departure in late eighteenth-century Europe during the period of the Enlightenment and the French Revolution, and concludes in the late twentieth century with the end of the Cold War and the immediate post-Cold War decade. Course materials integrate social, cultural, political, and economic approaches, as well as aspects of historiographical analysis, in order to facilitate study of both the foundations of the contemporary world and questions relating to historical representation. The course also provides coverage of significant global developments in the modern era. (3 credits)*

## **History 232: Thessaloniki: A City and its Inhabitants**

*Throughout its long history Thessaloniki has been home to many different peoples and cultures. The purpose of this course is to review the history of the city and to focus on the different ethnic communities which have inhabited it, including principally Greeks, Turks, Jews, and Armenians, among others. The course will consider the establishment of the city in Hellenistic times, its Roman and Byzantine periods, the impact of the Ottoman occupation, the coming of the Sephardic Jews, the effects of the Balkan and the two World Wars as well as those of the Holocaust on the city. It will include visits to such important cultural sites as the Archeological Museum, the Museum of Byzantine culture, the Jewish Museum of Thessaloniki, Roman antiquities and Ottoman buildings. (3 credits)*

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## **Humanities 120: Understanding Greek life and culture**

*The course provides an understanding of contemporary Greek life and what it means to be Greek. It does so by examining the practices and creations of Greek culture, as well as by identifying and understanding the main figures of Greek life and the political scene through time. In addition, it develops students' intercultural and communicative competency so that they can interact both locally in Greece and in the global community. Indicative content areas: Modern Greek language (acquisition of effective Modern Greek communication skills for daily use), Greek culture (language, art, cinema, music and customs), the Modern Greek state structure (background, historical development, public administration, and political parties) figures and Institutions, Greece as pluralistic society (the Orthodox church, family, community and values, migration, minorities), national identity (nation-building, ethnicity, and Greeks within Europe, the Balkans and the world. (3 credits)*

## **Humanities 209: Topics in Mythology and Religion in the Classical World**

*The course provides a systematic in-depth study of the major mythological characters, deities and myths of (mostly) the Greeks and the Romans through the use of both primary and secondary source material, visual and literary. The approach will be thematic and we will explore the nature and scope of mythology as well as its relation to religion, history and art. Comparisons with associated mythologies of the ancient Mediterranean world will be in place in order to demonstrate the broader historical and cultural framework. The myths and religion will also be studied in terms of their endurance and relevance in the western world as well as in popular culture. Finally, they will function as a setting for the discussion of matters of spirituality in the contemporary world. (3 credits)*

## **Music 120: Traditional and Contemporary Greek Music**

*This course will provide students with an introduction to the historically rich and varied traditions in Greek music. The principal focus will be on church music, folkloric song and dance, and contemporary variations of "lay" music. Discussion will also refer to the place of music in ancient Greek society. Knowledge of Greek is helpful but not required. (3 credits).*

## **Philosophy 101: Introduction to Philosophy and Critical Reasoning**

*The primary aim of this course is to train students in the skills required for critical analysis of discourse. Its secondary aim is to apply these critical analytic skills to the activity of philosophizing. Accordingly, the course is divided into two parts. In the first, the main concern is with the validity of inferences. Students learn sentential and predicate calculus so that they are in a position to check the validity of any argument proposed. In the second part, the main concern is inquiry and to this purpose the students first apply logical theory to methodology (induction, hypothesis, abduction, explanation, reduction theory, definition, distinction, issue, problem), and then apply all these techniques to the discussion of two problems: the existence of God and the problem of mind and its relation to matter. (3 credits)*

## **Philosophy 203: Ethics**

*This course is designed to help students develop their critical abilities through the analysis of ethical problems and to introduce them to contemporary ethical theory. Following an introduction to the structure of ethical problems, three classical approaches to the problem of justification are presented: moral obligation (Kant), the consequences of one's actions (Utilitarianism), and personal virtue (Aristotle), respectively. The course also includes discussions of meta-ethical issues concerning the relation between fact and value and the problem of justifying and then generalizing one's ethical judgments including the issue of moral relativism. (3 credits)*

## **Politics 101: Contemporary Politics**

*The purpose of this course is threefold. First, it explores various dimensions of what political scientists call "governance" and what psychologists call "Machiavellian Intelligence," namely those instances in our daily lives where humans, by their very nature, engage in activity one might call "political." Second, the course examines different aspects of the formal, systematic study of political phenomena, commonly known as the academic discipline of political science. Finally, it considers basic elements of negotiation, from simple exchanges with neighbors to formal diplomatic relations in contemporary international relations. (3 credits)*

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### **Politics 207: The Modern Greek Nation-State**

*This course analyzes contemporary Greek society by exploring some of its institutions and structures as well as its sociopolitical practices. A thematic organization of the course allows for particular idiosyncrasies of the Greek state to be investigated in-depth. Topics for examination are: the Modern Greek state structure, a civil society indicative of clientelism and populism, public administration and the role of political parties, the Greek Orthodox Church and religion, the Greek economy and the European Union, and the role of geopolitics. (3 credits).*

### **Pol 233: International Law and Organizations**

*The aim of this module is to introduce students to the complex, yet interesting system of international law and to the basic concepts and theories of international organizations and how they have changed the mechanisms of reasoning behind the making, implementation and enforcement of international law. A large portion of the module will focus on the fundamental principles of international law, the law of treaties, the relationship between international and domestic law, the imperative of human rights and the impact that international organizations have in the field of international relations, such as peacekeeping operations, human security and terrorism.*

### **Politics 250 Politics and New Technologies**

*The module is aiming at providing students insights into the following: The rapid development of technology over the past two centuries: first, second, third industrial revolution; the upcoming/current fourth industrial revolution. How technological progress is affecting politics: the limits of human activity and machine work. "Technophobia" and conservative restrains vis-à-vis technological advancement. Politics and new technologies in warfare. How technology affects gender. Artificial intelligence and the limits of human mind. (3 credits)*

### **Politics 334: Global Security Challenges**

*This module sets out to highlight the evolution of the concept of security (from State to human security and beyond) and the dynamism of international law and policy responses vis-à-vis a series of global threats (terrorism, threats to human health, environmental disasters, migration, financial threats). Students will be exposed to moral, legal and policy dilemmas highlighted in specific case-studies concerning global security threats and will be required to examine in depth and critically assess them. In order to fulfill those objectives, the main actors involved and the main tools employed in dealing with these threats will be presented and a series of primary sources related to the case-studies will be commented upon. (3 credits)*

### **Politics 350: Senior Thesis**

*An intensive, two-semester research project guided by one or more ACT faculty. Required for all PS&IR majors. OU Level 6. Prereq: senior status and permission of advisor. (3 credits)*

### **Research 210: Research Methods and Analysis**

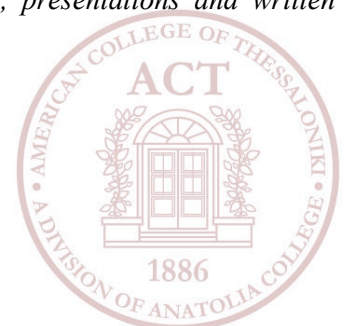
*This a required course in which students are given the opportunity to develop an understanding of the research process and familiarize themselves with key methodologies and practices in Humanities and Social Sciences research. The module provides students with the knowledge and experience of applying various transferable research skills at conceptualizing, framing, exploring, analyzing and discussing an issue, in light of advancing their academic, research and writing performances throughout their study years and to a graduate degree. Finally, it is designed to provide students with research skills which are in high demand in a variety of contemporary professional settings. (3 credits)*

### **Psychology 101: Introduction to Psychology**

*This course aims at providing a comprehensive introduction to the essential principles of the academic discipline of psychology by addressing such important topics as the function of the human brain, perception, language, development, learning, motivation, emotion, intelligence, personality, psychological disorders, and social behavior. The student is introduced to major theories of human behavior and is encouraged to assess critically the contribution and applicability of psychological research to daily life through class discussions, presentations and written assignments. (3 credits)*

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## **Psychology 130 – Cognitive Psychology**

*This course will help students to acquire knowledge regarding core issues, theories and experimental findings in cognitive psychology. The course intends to cover the main topics of the field of cognitive psychology as the main mental processes play a key role in human Behavior, thinking and decision making process. Nowadays, as the information people encounter and the situations they immerse themselves in are diverse, the understanding of the working process of language, perception, learning, memory, etc is necessary. Focus will also be given to the progression of the cognitive field and the investigation of real-world issues through controlled laboratory scientific experimentation (3 credits).*

## **Psychology 170: Personal Development and Employability**

*This course will introduce employability and personal development planning, familiarise students with the resources available to assist their career development, and help them to review their own personal profile and produce a good CV. It links with all subject areas. Regarding students who are majoring in psychology, the key aims of the course are to improve awareness of post BSc Psychology career pathways and to improve students' abilities to reflect on, and present, the skills, attributes and experience gained from a Psychology degree and how this can support them achieve graduate employment. Students will develop their self-awareness and gain an enhanced understanding of what motivates them in the workplace. Students will learn about options available to psychology graduates and approaches to independently researching career possibilities. Students will also build their appreciation of how to navigate the graduate recruitment process, gaining practical experience of how to market themselves in written applications and in interviews. (3 credits)*

## **Psychology 202: Personality Theories**

*This course will help students to deepen their knowledge regarding the formation of human personality and its impact on several areas of life. Also, the course intends to cover the main theoretical approaches, their strengths and limitations as well as their application to the explanation of psychopathology and problematic behavior. As nowadays, in the field of psychology, a lot of researchers and professionals suggest an eclectic approach, students need to be acquainted with the various theoretical schools and be able to apply basic theoretical information to real-life examples in practice. Focus will be also given to relevant issues, such as the genes and environment debate, gender differences and cultural perspectives so that students develop a holistic approach to the understanding of human personality. (3 credits)*

## **Psychology 205: Research methods and Statistics I**

*This is a course in which students are given the opportunity to develop an understanding of the research process and familiarize themselves with main paradigms and key methodologies and methods in Psychology research. It helps students understand the strengths and limitations of different research paradigms, various research methodologies and methods in Psychology. Also students learn a) about the main qualitative-research concepts (code, taxonomy, theme, theory) and b) about key statistics-related concepts (populations, samples, variables). They are introduced respectively to qualitative data analysis, mainly thematic analysis and also to quantitative data analysis and in particular, descriptive statistics where they learn about identification of variables, frequency distributions, measures of central tendency and variability. (3 credits)*

## **Psychology 211: History and Philosophy of Psychology**

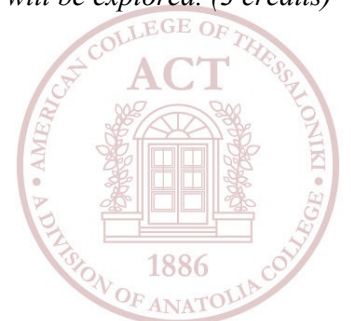
*This course aims to introduce students to major conceptual and historical paradigms and models in psychology, the history of psychology as a science, the social and cultural construction of psychology, the most interesting developments in the history and concepts of science and to the concept of the self or mind. They will learn about the philosophical origins of psychology, introspection, behaviourism, psychodynamic theory, evolutionary psychology, developmental psychology, cognitive psychology and neuroscience and they will be re-introduced to major figures in the history of psychology, including Wundt, Pavlov, Skinner, Piaget and Freud etc. The ways in which psychologists and psychiatrists have investigated human nature will be examined, and major controversies in the field along with basic philosophical assumptions made in the sciences of human nature will be explored. (3 credits)*

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### **Psychology 218: Clinical Psychology I: Psychopathology**

*This course will help students gain a thorough and critical understanding of clinical issues and specifically, mental health and illness, definition of psychopathology, diagnosis and various factors that should be taken into account in the process of identifying several psychological disorders. As mental health professionals need to be aware of all the important issues and ethics in the clinical field, students need to be acquainted with the main psychological disorders and critically apply theoretical information to case studies and real life examples from professional practice. Therefore, focus will be given to assessment, causation, risk factors and effects of the main psychological disorders but also students will be introduced to the basic principles of treatment and prevention strategies. Moreover, they will be acquainted with issues of stigma and social exclusion so that they are aware of diversity issues and their implication on clinical practice. (3 credits)*

### **Psychology 240: Forensic Psychology**

*This is a course which will provide students with the opportunity to learn about Forensic Psychology, a recent subfield of Psychology which emphasizes the application of research and practice in other areas of psychology (e.g., cognitive psychology, social psychology) to the legal arena. The module covers the history, basic principles and objects of study of Forensic Psychology. Some important thematic areas are introduced such as forensic cognition (how offenders think), psychology of criminal behavior and victimology, the role of psychology in police and legal processes, assessment and treatment of offenders in forensic settings. (3 credits).*

### **Psychology 305: Counselling and Psychotherapy**

*This course will help students to further deepen their knowledge regarding the prevalent counselling theories and approaches and psychotherapy research and critically evaluate them and apply related theory to case studies from professional practice. They will also get acquainted with the interview process, the therapeutic process and relationship, the counselling skills and the ethical issues on both theoretical and practical basis. Focus will be given to diversity issues in counselling, such as ethnicity, social class, age, gender, sexual orientation, etc. Moreover, the emphasis of this course on experiential learning and personal awareness and development will facilitate students to better comprehend the role of the psychologist in the counselling field and apply the knowledge and skills to their practicum. (3 credits)*

### **Psychology 310: Organizational Psychology**

*Through this course the students will understand in depth the influence and interaction between organizations and the groups and the individuals who lead and work within them and will learn to analyze how these processes shape outcomes related to the use of human capital and to organizational effectiveness. The students will also learn to critically reflect on the roles, behaviors, interactions and outcomes they have had or will have themselves while participating in organizations or institutions. This course will start by presenting the history of organizational psychology and the topics of study and practice for organizational psychologists and will then discuss different structures and cultures of organizations. It will continue by covering various processes unfolding between organizations, groups and individuals (such as leadership, motivation for work, resistance to change, persuasion, team-working, problem solving, conflict/collaboration) and also examine how these processes shape various outcomes related to the performance and wellbeing of groups and individuals and the operation and growth of institutions. Research designs and methodologies in organizational psychology will also be covered. (3 credits)*

### **Psychology 350: Senior Thesis I**

*This is a required course for psychology majors. It constitutes the first term of a year-long research project, at the end of which the students are required to submit an 8,000-word thesis. In the Fall Term, they submit a 3000-word draft of the thesis, with main emphasis being the literature review. (3 credits)*

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### **Psychology 370: Psychology of Trauma**

*This course is designed to facilitate students' knowledge and insight into the psychological impact of trauma from different sources, including accidents and life-threatening events, interpersonal abuse and violence, terrorism, natural disasters and others. Note: This course is not purely academic, so it is very possible that you, someone you know, or any of your classmates have survived very significant crises or traumas in their lives. Some of the lectures, media presentations, and guest speakers may have a strong emotional impact on you, so it is recommended that all students seek out some form of support during this course; a list of support services on and off campus will be provided at the beginning of class. (3 credits)*

### **Research 210: Research Methods and Analysis**

*This a required course in which students are given the opportunity to develop an understanding of the research process and familiarize themselves with key methodologies and practices in Humanities and Social Sciences research. The module provides students with the knowledge and experience of applying various transferable research skills at conceptualizing, framing, exploring, analyzing and discussing an issue, in light of advancing their academic, research and writing performances throughout their study years and to a graduate degree. Finally, it is designed to provide students with research skills which are in high demand in a variety of contemporary professional settings. (3 credits).*

### **Sociology 101: Contemporary Society**

*This course will explore the discipline of sociology, with a particular focus on the key concepts and issues relating to the study of contemporary society and culture. The course seeks to establish a methodological balance between theoretical grounding and an applied framework as it examines the following thematic issues: social and cultural theoretical perspectives, globalization, power, ethnicity, gender, the mass media, and the dynamics of culture in the contemporary world. (3 credits)*

### **Social Science 210: Introduction to Global Studies and Human Geographies (formerly History 210)**

*This course sets out to explore a number of subjects relating to the study of geography and politics. Students will be exposed to topics such as world/regional geography, cartography, geopolitics, politics and the environment, colonial/postcolonial geographies, and development, while the multidimensional and trans-disciplinary nature of geographical and political studies will be emphasized throughout. The course will also investigate such topics as world systems theory, cultural change, and globalizations. (3 credits)*

### **Social Science 349: Contemporary Globalization**

*This course aims to give the students a complex understanding of the processes of globalization. We will first look at how different theoretical perspectives make sense of globalization, i.e., what it is, whether it is a novel set of phenomena or not, and what its impact is on our world. With the background of this theoretical diversity, we will then go into studying in depth the institutions and impact of globalization. We will explore how globalization shapes and alters the economic, political and social structures of societies, and what specific roles the global institutions play in this transformation. We will also look at the gender dimension of this claim. Finally we will discuss those political movements which criticize and provide alternatives to globalization. (3 credits)*

## **DIVISION OF TECHNOLOGY & SCIENCE**

### **ART 130: Introduction to Photography, from the analog to digital era**

*This course introduces students to digital photography and image editing. Students will develop artistic skills in photography through experience in creation, observation and critical consideration of photography. Throughout the semester, students will be expected to photograph consistently, present assignments and projects in class and develop skill in using photography as a tool for visual communication. Class time will consist of lectures, demonstrations, critique of student work, lab work, museum and studio visits. In addition, students will be exposed to key photographic artistic movements (3credits)*

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## **Anatomy and Physiology 115: Integrated Human Anatomy and Physiology I**

*This course is the first part of a two-part Anatomy & Physiology Course. It is designed to provide an understanding of the anatomical structures, function and regulation of integumentary, muscular, skeletal, nervous and endocrine systems. This course aims to provide students with knowledge of normal function of the organ systems and thereby provide the information base for interpreting data relating to health and disease. For those in health fields, this information will serve as the foundation for most of your courses. (4 credits)*

## **Biology 112: Principles of Biology**

*This course is designed to introduce the basic principles of modern biology, the framework within which new discoveries are interpreted, and the relations among various branches of biological research. The goal of this course is to provide first year students with a firm grasp of the major concepts underlying biological processes. Students who are interested in careers in biological sciences, biomedical sciences, and biotechnology should find that the course provides a firm grasp on an understanding of the concepts that will serve them well in their academic track that lies ahead. The materials covered include the structural and functional aspects at the molecular and cellular level of the following: cell structure and function, cell organelles, cellular reproduction, cellular respiration, photosynthetic pathways, Mendelian inheritance, DNA structure, replication, gene structure, and gene function and expression/control. (4 credits)*

## **Biology 201: Foundations of Microbiology**

*The goal of this course is to introduce foundational concepts in microbiology and their connection with all the health care fields. The course subjects include the identification of microbes, mechanisms of pathogenicity and microbial disease, structure and response of the host immune system, and prevention against the spread of infectious disease. (4 credits)*

## **Biology 330: Cell Biology and Histology**

*This is a required module for all Biological Sciences majors. This module is designed to provide an understanding of the fundamental aspects of cell biology and tissue organization. The central object of study is the eukaryotic cell, its intracellular molecules, and the interactions between cells that result in the construction of multicellular organisms. This is a combined lecture and lab module that explores the relationship between structure and function at the cellular and tissue levels. The module will give the students an introduction to the structure and function of cells and cellular structures including the plasma membrane, cytoplasm, intracellular organelles, extracellular matrix, epithelia, and glands. Its overarching aim is to provide students with knowledge of the general organization and functions of the different cellular organelles, the diversity of animal and plant cells, and the cytophysiological characteristics that define the different tissues. (4 credits)*

## **Biology 410: Principles of Epidemiology and Public Health**

*This is a required course for all Biological Sciences majors. It is designed to cover basic epidemiology principles, concepts, and procedures useful in the surveillance and investigation of health-related states or events. The course will provide students with a basic understanding of the practices of public health and medical statistics required for preventing and addressing population-based health outcomes. The course explores the basic principles and methods of public health epidemiology. The biological, environmental, sociocultural, and behavioral factors associated with the etiology and distribution of health and disease are also investigated. In this context, topics covered in this course include: basic principles of epidemiology; measures of disease frequency; epidemiologic study designs: experimental and observational; bias; confounding; outbreak investigations. Moreover, the course focuses on providing an understanding of the evolution of public health, so that the students realize the global nature of the discipline, the way historical events and threats have shaped it, and its significance for identifying solutions for public health issues. (4 credits)*

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**Biology 430: Biotechnology Principles and Applications**

*This course introduces the technology currently used in the analysis and engineering of genes. It also introduces the principles of allied technologies (proteomics, transcriptomics, and cell culture) and exposes students to industry through a site visit to a biotech company and provides an introduction to the use of a model-guided design for experimentation in biotechnology. Upon completion of this course students will be able to understand modern biotechnology methods used to introduce genes in bacteria, plants and animals. Integrate principles of proteomics, transcriptomics and cell culture and understand their utility and applications in industrial biotechnology. Appreciate the reasons for experimental repetitions and replicates and the importance of appropriate statistical analysis for interpretation of experimental data. Gain practical knowledge of recombinant DNA techniques and basic protein isolation and characterization techniques. Gain an appreciation of the interdisciplinary nature of modern laboratory-based biological tools and techniques. (4 credits)*

**Biology 493: Thesis I**

*This course is the first half of a year-long capstone project, concluding the students' four-year learning experience in the Biological Sciences program. It is designed to foster research, autonomy and synthesis of concepts and skills acquired in all other courses. The first half of the capstone project (SNCB 493) is devoted to research/analysis and design, while the second semester counterpart (SNCB 494) places emphasis on implementation, experimental validation, thesis writing and final project presentation. This course will provide students with an opportunity to work in a guided but increasingly independent fashion, to explore a particular problem in depth, to make practical use of principles, techniques and methodologies acquired elsewhere in the course. To challenge students to form a scientific thesis, carry out a sustained piece of individual work to prove or disprove it, and to present their project work in a dissertation. To enhance communication skills, both oral and written. (4 credits)*

**Chemistry 117: General Chemistry for the Biological Sciences**

*This course is designed to introduce biology students to the fundamental principles of chemistry. Topics to be covered include atomic structure, chemical equations, the periodic table, chemical bonding and intermolecular interactions, thermochemistry, reaction spontaneity, reaction rates, chemical equilibria, acid base chemistry and reactions in aqueous systems. Emphasis will be given to applications of chemical principles in biological systems. Students will develop an understanding of: Atomic structure and chemical properties of elements; Chemical reactions and reaction stoichiometry; Nature of chemical bonding and molecular shape; Significance of intermolecular forces; Thermodynamics of chemical reactions; Chemical kinetics, chemical equilibria, reaction rates, Acid base chemistry, and Buffers, acid base equilibria. (4 credits)*

**Chemistry 215: Organic Chemistry I**

*This course is designed to introduce students to the fundamental principles of chemistry of carbon-containing compounds, including three-dimensional structures, chemical properties and methods of structural identification, reactions, and syntheses. Topics to be covered include, stereochemistry, and functional group characteristics of alkanes, alkenes, alkynes, alkyl halides, alcohols, and ethers, with an emphasis on reaction mechanisms and multi-step syntheses. (4 credits)*

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## **Computer Science 101: Digital Literacy**

*This course serves as an introductory course to digital literacy, both on a theoretical and an experiential level, focusing on general purpose computing, networks and the internet, information and data management and social media. Under the umbrella of Computer Science, students are exposed to the fundamental principles of operating systems, human-computer interaction, networking and communication, architecture and organization, computational science, information management, social issues and professional practice and learn to identify and exploit them for everyday organizational tasks. On a practical level, students learn how to use Operating Systems (proprietary and FOSS) and collaborative cloud-based office productivity software; how to publish and present their work using computing and mobile / smart devices and the internet; how to use web 2.0 tools for content creation and delivery (collaborative wikis, blogs, newsgroups, social media platforms); how to create and manage their personal digital identity; how to organize and process data; how to search for and critically evaluate information which is available on the world wide web and scientific literature databases; how to plan projects using modern web-based tools. They are also exposed to technical writing, collaborative informatics projects, public speaking and presenting their work within pre-determined time limits. May be taken as a Computer Science GER. (3 credits)*

## **Computer Science 105: Introduction to Programming I – Structured Programming**

*This is an introduction to computing and computer programming using the Java or C language. Students are introduced to the basic elements of computing hardware, information technology and computer programming. Programming is explained, demonstrated and practiced using the Java or C programming language. Ultimately the course aims to advance beyond basic computing skills towards software engineering, instructing students to develop autonomy as sophisticated computer users and programmers. May be taken as a Computer Science GER. (3 credits)*

## **Computer Science 151: Quantitative Computing**

*The course aims at deepening student quantitative skills by interrelating mathematical modeling and spreadsheet implementation. Students are presented real-world problems encountered in the modern enterprise, with emphasis on spreadsheet computing and are taught both the mathematical background and the necessary structures for tackling the problem with spreadsheets. Emphasis is placed on mutual translation of mathematical model and spreadsheet implementation. Focus is on Business Planning and topics are drawn from Microeconomics, Finance, Marketing, Managerial and Financial Accounting. Mathematical topics covered include: Real numbers and their computer implementation, polynomial, exponential and logarithmic functions, matrices, linear programming and optimization, recursive models, discrete approximation of the derivative and integral. (3 credits)*

## **Computer Science 180: Discrete Structures**

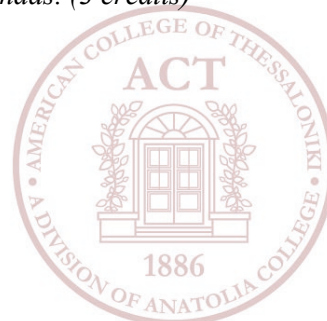
*This course introduces the mathematical structures and methods that form the foundation of computer science. The material will be motivated by applications from computer science and emphasize: • Techniques: binary and modular arithmetic, set notation, methods of counting, evaluating sums, solving recurrences, ... • Supporting Theory: basics of probability, proof by induction, growth of functions, and analysis techniques and • General problem solving techniques with many applications to real problems. The course material is divided into five modules. Each module starts with a motivating application then goes into techniques related to that application and the theory behind those techniques. Each module ends with one or more fairly deep applications based on the material. These modules are: Computers and Computing: Numbers, Circuits, and Logic; Cryptography: Integers and Modular Arithmetic; Combinatorics: Sets, Counting, and Probability; Algorithmic Analysis: Searching and Sorting; Networks: Graphs and Trees. (3 credits)*

## **Computer Science 190: Programming with Python**

*This course introduces students to programming for data and information science. Key concepts in programming, data structures, and data analysis are presented through Python. The various programming stages of a data analytics pipeline are explained and students are introduced to data analytics and visualization tools. Topics addressed include: Variables and mathematical operators, Files and Data visualization, Conditionals, Iteration (loops) and lists, Functions, 2D lists, Dictionaries, Classes & Objects, and Pandas. (3 credits)*

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## **Computer Science 201: Business Computing**

*The course aims at presenting Business majors with the basic computing structures needed to support a company's management. Students will be exposed to data tables from a variety of business activities as well as the database techniques necessary to model and effectively process these data for the purposes of company assessment and planning. Examples of applications residing in the WWW will be presented, analyzed and subsequently implemented by students with the database medium used in the course. (3 credits)*

## **Computer Science 205: Business Data Management**

*The purpose of COMP SCI 205 is to introduce the idea of business data management, data modeling, and processing methodologies with the use of standalone design tools and personal databases. It aims at fostering proper data design through the relational methodology and developing all necessary data processing and presentation skills. The aims of this course are to:*

- Define the role of Systems Analyst and Database designer.*
- Explain System Analysis and interpersonal communication skills that the System Analyst must have*
- Explain Project Management and discuss tools that the system analyst must have*
- Explain the Methodologies that are used for Systems Analysis and Database Design*
- Explain the various tools that certain methodologies use*

*Provide students the opportunity to work on the most popular database (Oracle), in a project in order to implement the taught methodologies (3 credits)*

## **Computer Science 206: Web Development**

*CS 206 is an introductory course for beginning web designers. We will explore some essential concepts related to the creation of effective web sites. In the last portion of the course we will concentrate on client-side scripting using the programming language JavaScript. This course aims at introducing students the basic web design guidelines, Fundamentals of Hyper Text Markup Language (HTML), and how to use a Simple HTML Editor as well as Web Authoring Tools. Also, one of the main goals of the course will be to understand what scripting languages are and to be able to develop scripts. (3 credits)*

## **Computer Science 215: Data Structures**

*The purpose of CS215 is to introduce students to the main concepts and implementation principles of object-oriented programming and data structures, using Java as the programming language. This course builds on the knowledge and skills acquired in CS105 – Introduction to Programming I. The course is split in two parts; the first part deals with object-oriented programming using Java, re-enforcing the fundamental concepts learned in CS105. The second part of the course introduces data structures. The data structures examined include arrays, lists, queues, stacks, trees, heaps, hash tables and graphs. Searching, sorting, inserting, deleting and other simple operations on these structures will also be discussed. (3 credits)*

## **Computer Science 310: Hardware & Computer Architecture**

*This course addresses the structure and function of modern digital computing devices, ranging from the compilation process down to the hardware level. Despite the pace of change and variability in the fields of informatics, electronics and computer engineering, certain fundamental digital design concepts apply consistently throughout. CS310 students will both gain the relevant theoretical understanding and have a chance to apply it in practice designing, simulating, troubleshooting and optimizing their own combinational and sequential logic circuits. The course concludes with a discussion on system level organization and architecture of modern computing devices. This course builds on knowledge and skills acquired in CS105 – Introduction to Programming I. Upon successful completion of the course students be able to:*

- Understand and be able to explain the significance and function of fundamental components within a typical modern computing device (processor, memory, I/O, operating system), their interconnections with each other and the outside world.*
- Comprehend and follow the data flow through the internal structure of a digital microprocessor.*
- Understand the importance and function of logic gates as primary building components in digital design.*
- Analyze combinational digital circuits and optimize them using Karnaugh maps.*
- Be able to design, simulate, troubleshoot and optimize their combinational and sequential digital logic circuits.*
- Recognize and understand basic Assembly language and Machine Code. (3 credits)*

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## **Computer Science 322: Network Operating Systems and Administration**

*This course aims to provide the student with the knowledge of how computer networks are designed, engineered and operated. This includes knowledge of the fundamental algorithms used in the management of both resources and traffic and how these algorithms may interact with application programs. Instruction includes, but is not limited to network terminology and protocols, network standards, LANs, WANs, OSI models, cabling, cabling tools, routers, router programming, star topology, and IP addressing. The student will study and design networks, using Ethernet, TCP/IP Addressing Protocol, and dynamic routing. Particular emphasis is given to the use of decision-making and problem-solving techniques in applying science, mathematics, communication, and social studies concepts to solve networking problems. (3 credits)*

## **Computer Science 360: Introductory Data Science**

*This course is an introduction to data science using Python. Students learn how to process, clean and manipulate data in a variety of formats; visualize multidimensional data; communicate the findings of a data analytics project; apply machine learning algorithms to a variety of datasets; design pipelines for the evaluation of models' performance. This course provides the student with the data-science skills and the analytical mindset necessary to meet the needs of business and the real-world decision-making problems. (3 credits)*

## **Computer Science 412: Object Oriented Design Patterns**

*The course revisits Object Oriented application development methodology at the Senior level examining its effectiveness in the life cycle of professional applications and software reuse through the adoption of Object Oriented Design Patterns. It presupposes the knowledge earned through the introductory line of the Programming Fundamentals programme thread and follows level 5 modules relating to Data Modeling (CS 312) and Systems Design (CS450) while specializing them within the context of Web Development. Currently CSC 325 (Distributed Systems) is a necessary prerequisite concerning web deployment technologies. The module mostly emphasizes the employment of OO concepts to Web Development yet it is of general enough nature for a level 6 module as the design patterns examined are applicable to a wide range of technologies and application domains. (3 credits)*

## **Computer Science 443: Capstone Project I**

*This is a set of linked courses (CSC 443-444) to be taken in sequence over the course of the senior year. The course aims to give students the opportunity to work in a guided but independent fashion to explore a substantial problem in depth, making practical use of principles, techniques and methodologies acquired elsewhere in the program of studies. It also aims to give experience of carrying out a large piece of individual work and in producing a final project report. It has two distinct phases: the preparatory phase focusing on literature review, assessment of Technologies and Project Specification and the implementation phase focusing on project design, development, documentation and presentation. This course places an emphasis on the role of functions (coordinate systems, properties, graphs and applications of polynomial, rational, logarithmic and exponential functions), solving systems of linear equations, matrix operations, mathematics of finance, and introductory counting techniques. (3 credits)*

## **Ecology 110: Ecological Principles**

*The goal of the course is to introduce students to general ecology. It focuses on major ecological concepts in order to provide students with a robust framework of the discipline upon which they can build. Each discussion is organized around two or four major concepts to present the student with a manageable and memorable synthesis of the lecture and it is supported by case histories that provide evidence for the concept and introduce students to the research approaches used in the various areas of ecology. Special emphasis to local environmental problems countries face and the approaches they use in solving these problems. Laboratory included. (4 credits)*

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**Mathematics 101: Elements of Finite Mathematics**

*This course covers: rate of change and introduction of the derivative for functions of one variable; applications of the derivative to graphing one-variable functions and to optimization problems; introduction of functions of several variables and partial derivatives; problems of unconstrained and constrained multivariable optimization; applications of differential equations; integration of functions of one variable and applications, and advanced methods of optimization. Emphasis is placed on applications and problem solving through conventional and computer methods. May be taken as a Math and Statistics GER. (3 credits)*

**Mathematics 115: Business Calculus**

*This course covers: rate of change and introduction of the derivative for functions of one variable; applications of the derivative to graphing one-variable functions and to optimization problems; introduction of functions of several variables and partial derivatives; problems of unconstrained and constrained multivariable optimization; applications of differential equations; integration of functions of one variable and applications, and advanced methods of optimization. Emphasis is placed on applications and problem solving through conventional and computer methods. (3 credits)*

**Mathematics 120: Calculus I for Science and Engineering**

*This course provides a solid foundation in Calculus concepts, tools and techniques for the student entering Science and Engineering fields. The course covers definition, calculation, and major uses of the derivative, as well as an introduction to integration. Topics include limits; the derivative as a limit; rules for differentiation; and formulas for the derivatives of algebraic, trigonometric, and exponential/logarithmic functions. Also discusses applications of derivatives to motion, density, optimization, linear approximations, and related rates. Topics on integration include the definition of the integral as a limit of sums, anti-differentiation, the fundamental theorem of calculus, and integration by the U-substitution and Integration by parts technique. The course emphasizes conceptualization, modeling, and skills. There is a concentration on multiple ways of viewing functions, on a variety of problems where more than one approach is possible, and on student activity and discussion. (3 credits)*

**Mathematics 121: Calculus II for Science and Engineering**

*The purpose of this course is to give a solid foundation in Calculus concepts, tools and techniques for the student entering Science and Engineering fields. This course is a continuation to Calculus I for Science and Engineering where the student mastered: Limits, Differentiation, Anti-Differentiation and Basic Integration skills of 2D functions as well as basic introduction to parameterized curves and motion. This course will cover: Techniques and Applications of Integration. Topics will include: Integration by Parts; Integration by Partial Fractions; Trigonometric Integration; Numerical Integration; Improper Integrals; and Areas, Volumes, Mass/Moments and Work as Integrals; Infinite Series and Introduction to Vectors. Other topics addressed are: Convergence of Sequences and Series of numbers, Power Series representations and Approximations of Functions, 3D Coordinates, Parameterizations, Vectors, Dot and Cross Products, Equations of Lines and Planes. (3 credits)*

**Mathematics 130: Mathematical Reasoning**

*The purpose of this course is to give a solid foundation in mathematical reasoning with a focus on writing and analyzing rigorous mathematical arguments and to give the tools and techniques necessary for all mathematics and science courses. At the end of the course, you should have a very solid understanding of a variety of foundational topics: in addition to learning fundamental details about logic, sets, functions, numbers, and cardinality, you will know the ideas behind the proofs of the major results and how they can be used elsewhere; above all, you will have learned the language of rigorous mathematics. Success in this course thereby demands facility with the basic concepts and with the underlying theory (3 credits)*

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## **Mathematics 201: Calculus III for Science and Engineering**

*The purpose of this course is to give a solid foundation in Calculus concepts, tools and techniques for the student entering Science and Engineering fields. This course is a continuation to Calculus II for Science and Engineering. This course will address: Vectors, the dot and cross products, lines, planes, and surfaces. Vector-valued functions, their derivatives and integrals, the length and curvature of space curves, and velocity and acceleration along space curves, culminating in Kepler's laws. Functions of two or more variables are studied from verbal, numerical, visual, and algebraic points of view. Contour maps and the Midpoint Rule are used to estimate the average snowfall and average temperature in given regions. Double and triple integrals are used to compute probabilities, surface areas, and (in projects) volumes of hyperspheres and volumes of intersections of three cylinders. Cylindrical and spherical coordinates are introduced in the context of evaluating Theorem, and the Divergence Theorem are emphasized. The course emphasizes on skill, conceptualization and some modelling. All three are of great importance. Visualization and analysis via the use of technology is used in lecture and could be addressed in Take-Home Assignments. (3 credits)*

## **Mathematics 215: Differential Equations and Linear Algebra**

*The idea of constructing mathematical models to address real-life applications is at the core of the interplay between mathematics and the sciences. In the context of natural sciences, it is often the case that these models involve univariate functions and their derivatives. The course will present an overview of the methods to set-up and solve such equations, called ordinary differential equations (ODE). In parallel, and motivated by systems of linear differential equations, the course will cover the core concepts of Linear Algebra. Following the completion of the course students are expected to have mastered the following topics: First Order Differential Equations; Higher Order Linear Differential Equations; Laplace Transforms; Numerical Methods; Boundary Value and Initial Value Problems; Applications to the Sciences; Systems of Equations and Matrices; Linear Transformations and Eigenvalues. (3 credits).*

## **Sea Sail 101-3: Introduction to Sea Sailing**

*The aim of this course is to provide the basic yachting skills so that successful students will be safety conscious, have a basic knowledge of sailing and be capable of taking a yacht out without an Instructor on board in light to medium winds in protected waters. The course has both theoretical (In-Class) and practical (On-Board) components; with the latter being the largest part of the course. (3 credits)*

## **Nutrition 130: Fundamentals of Human Nutrition**

*The course explores basic concepts of the science of nutrition. Topics include description and role of nutrients, their dietary sources and their fate into the human body (digestion, absorption etc.); energy balance and weight control; eating disorders; nutrition at different developmental stages (childhood, pregnancy, lactation, old age); nutrition in the development/prevention of human diseases. Emphasis will be given in the use of scientific methodology to explain how nutrients and other food constituents contribute to proper growth, development and health. (4 credits)*

## **Physics 120: University Physics I, for Science and Engineering**

*This course is designed to introduce students to the fundamental principles of Mechanics. Topics to be covered include Dynamics, Work, Kinetic and Potential Energy, Systems of Particles, Momentum, Collisions, Rotation, Torque and Angular Momentum, Statics. As far as specific Systems and Force Laws we will look at Fluids, Oscillations, and Gravity. (4 credits)*

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## **Physics 121: University Physics II, for Science & Engineering**

*This course is the second of a two-semester sequence of college Physics courses for students in the sciences and engineering. Topics to be covered include electric fields and Coulomb's Law, Gauss' law, capacitors, resistors and DC electric circuits, magnetic fields, induction and the basic properties of electromagnetic waves. In this course, we want you to learn how to analyze mechanical systems using Newton's laws. In particular, you should learn to: Describe wave motion graphically and algebraically, apply calculus to the study of waves, identify the electric forces acting on a charge, and work with systems of charges, learn and work with the concept of the electric field for point charges and extended bodies, understand the principles Gauss' law and the work with calculus to do this, work with electric potential for systems of charges and extended bodies of charge, understand capacitance and how charge and energy are stored in such devices, understand resistance and know how to work with simple DC networks of resistors, be able to work with small combinations of resistors and capacitors (RC circuits), work with the forces on charges and current elements in magnetic fields, know how moving charges and current elements produce magnetic fields, be able to work with changing magnetic field fluxes which induce EMF's (Faraday's law), work with the inductance of a coil. (4 credits)*

## **Statistics 205: Statistics I**

*This course introduces students to basic statistical concepts and techniques. Each technique is illustrated by examples, which help students to understand not only how the statistical techniques are used, but also why decision-makers need to use them. Topics covered include Frequency Distributions, Statistical Descriptions, introduction to Probability Theory, Discrete Probability Distributions, Continuous Probability Distributions, Sampling and Sampling Distributions. Emphasis is given to problem solving with the use of statistical software. (3 credits)*

Anatolia College | Anatolia High School | Anatolia Elementary School

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