

AI | ARTIFICIAL INTELLIGENCE

Not all courses are offered every semester. Refer to the schedule of courses for each term's specific offerings.

More Info (<https://one.ufl.edu/soc/>)

Unless otherwise indicated in the course description, all courses at the University of Florida are taught in English, with the exception of specific foreign language courses.

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ABE 4662 Quantification of Biological Processes 3 Credits

Grading Scheme: Letter Grade

Quantitative description and analysis of biological processes pertaining to microbes, plants, animals and ecosystems. Biological transport phenomena, bioenergetics, enzyme kinetics, metabolism, bioregulation, circulatory and muscle systems, agroecosystems. Analytical and experimental laboratory for development of quantitative skills.

Prerequisite: (ABE 2062 or BSC 2010) and (EGN 3353C or CWR 3201).

ADV 3001 Advertising Strategy 3 Credits

Grading Scheme: Letter Grade

Overview of the strategic planning process required to develop a successful strategic, persuasive communication plan such as an advertising, integrated marketing communications, or social marketing campaign. Case studies and projects teach the skills needed to address a variety of communications management issues and engage audiences in diverse marketplaces.

Prerequisite: MAR 3023 and ADV 3008 with minimum grades of C and ADV major.

ADV 3500 Digital Insights 3 Credits

Grading Scheme: Letter Grade

Acquiring, evaluating, and analyzing information for advertising decisions. Emphasizes understanding the scientific method, developing explicit and measurable research objectives, selecting appropriate methodologies, and analyzing data.

Prerequisite: MAR 3023 and ADV 3008 with minimum grades of C and STA 2023 and ADV major.

ADV 4300 Media Planning 3 Credits

Grading Scheme: Letter Grade

Provides an in-depth overview of the media planning process. Emphasizes the value of various media channels and evaluation methods to design innovative and integrated media strategies to reach and engage diverse audiences.

Prerequisite: 3JM ADV; minimum grades of C in ADV 3001 and ADV 3500.

ALS 3200C AI in Agricultural and Life Sciences 3 Credits

Grading Scheme: Letter Grade

Artificial intelligence (AI) is used to solve problems in research and industry. This course provides students with understanding of and practical hands-on experience building and using AI systems. Students will obtain the skills and knowledge they need to use AI to solve real-world problems in agricultural and life sciences.

Prerequisite: (BSC 2891 or STA 2023 or STA 3032 or EEL 3872) with minimum grades of C.

BCN 4594 Building Energy Modeling 3 Credits

Grading Scheme: Letter Grade

As energy becomes a more precious commodity, it is crucial to design and operate high performance buildings. A solid foundation of energy engineering and sustainability principles is essential to achieving these higher performance standards.

Prerequisite: junior standing or higher.

BSC 4892 AI in Biology 3 Credits

Grading Scheme: Letter Grade

Examines how AI has rapidly become ubiquitous in daily life and been applied to diverse areas of Biology. Focuses on machine learning approaches as well as deep learning methods, including transformers. Covers machine learning methods for tabular data, computer vision, transfer learning, natural language processing, and transformer-based architectures. Classes typically applied coding with Jupyter Notebooks on HiPerGator. Prior Python coding experience required.

Prerequisite: BSC 4452 or BSC 6451 or BSC 2891 or Instructor permission (Python programming experience.)

CAP 4641 Natural Language Processing 3 Credits

Grading Scheme: Letter Grade

Introduction to the essential concepts, principles, and techniques of Natural Language Processing (NLP). Practical application and theoretical concepts are examined. Topics include information extraction, language construction, grammars, disambiguation, as well as system modeling, classification, and evaluation.

Prerequisite: COP 3530.

DCP 4300 AI in the Built Environment 3 Credits

Grading Scheme: Letter Grade

Introduces Artificial Intelligence (AI) and its applications to real world problems in planning, design, and construction of the built environment. Includes application in professional practice in architecture, construction management, interior design, landscape architecture, and urban and regional planning.

Prerequisite: EEL 3872 and PHI 3681.

ECO 4421 Econometrics 4 Credits

Grading Scheme: Letter Grade

Introduces concepts and methods used in empirical economic research. Emphasizes practical use of basic econometric techniques to estimate economic relationships and evaluate policy. Covers topics needed to plan and implement empirical projects, and understand potential problems with the empirical analyses of others.

Prerequisite: STA 2023 and (MAC 2233 or higher) and (ECO 3101 or ECP 3703).

ECO 4422 Econometrics 2 4 Credits

Grading Scheme: Letter Grade

Introduces advanced concepts and methods employed in empirical economic analysis. Focuses on identification of causality using regression techniques. Examines regression discontinuity and difference-in-differences identification strategies.

Prerequisite: ECO 4421 OR (STA 4210 AND ECO 3101) OR (STA 4210 AND ECP 3703).

EEE 4773 Fundamentals of Machine Learning 3 Credits

Grading Scheme: Letter Grade

Overview of machine intelligence and the role of machine learning in a variety of real-world problems. Probability and statistics to handle uncertain data. Topics covered include: learning models from data in both a supervised and unsupervised fashion, linear models and non-linear models for classification, and linear dimensionality reduction.

Prerequisite: EEL 3135 and EEL 3850 with minimum grades of C.

EEL 3872 Artificial Intelligence Fundamentals 3 Credits

Grading Scheme: Letter Grade

Overview of Artificial Intelligence (AI), approaching the concept from its origins to expectations for the future; focuses on various AI technologies, how to build Machine Learning models, and how to apply AI tools to solve real world problems. Some concepts are types of AI and Machine Learning, Hacking and the IoT, AI today and its outlook for the future.

Prerequisite: Junior standing or above.

ESI 4610 Introduction to Data Analytics 3 Credits

Grading Scheme: Letter Grade

Provides a basic understanding of the skills necessary for managing and analyzing data. The concepts covered include exploratory data analysis, data manipulation, data cleaning, data wrangling, and machine learning models. A basic understanding of data management with SQL is also provided. All the technical skills will be motivated by different examples involving data. Python is the programming language used.

Prerequisite: COP 2271 (with minimum grade of C) and ESI 3215C (with minimum grade of C).

EXP 4174C Laboratory in Sensory Processes 4 Credits

Grading Scheme: Letter Grade

Collect, analyze, and evaluate data on specific problems related to sensory and perceptual abilities.

Prerequisite: (EXP 3104 or EXP 3604) and STA 2023.

Corequisite: STA 3024.

FIN 3403 Business Finance 4 Credits

Grading Scheme: Letter Grade

The acquisition and management of funds by business. A minimum grade of B is required in FIN 3403 to register for required finance major courses.

Prerequisite: (ACG 2021 and junior standing or higher) or (ACG 2021 and ECO 2023 and sophomore standing).

GEO 2351 Geographical Sciences and Sustainability 3 Credits

Grading Scheme: Letter Grade

Examines the most critical environmental issues facing the world today; emphasizes the sustainability of both human and physical systems in the 21st century utilizing cutting-edge geographic technologies: spatial analysis, GIS, and satellite imagery.

Prerequisite: any Biological Sciences or Physical Sciences General Education course.

GEO 4167C Intermediate Quantitative Analysis for Geographers 3 Credits**Grading Scheme:** Letter Grade

Surveys various multivariate techniques commonly used to analyze geographic data. Emphasis on hypothesis testing, inference, multiple regression, analysis of variance and cluster analysis. Introduces time-series regression and grouped estimation procedures, factor analysis, probit/logit modeling and trend-surface interpolation. (WR)

Prerequisite: GEO 3162C or the equivalent.**Attributes:** Satisfies 6000 Words of Writing Requirement**GIS 2002 The Digital Earth 3 Credits****Grading Scheme:** Letter Grade

Focuses on how the Earth's surface is visualized, explored, and analyzed in digital formats (e.g. maps, satellite images, aerial photos). Provides an introduction to fundamental concepts of digital geographic data to understand the Earth environment and human society based on the vast quantities of geographic information in our ever-changing world.

GIS 3043 Foundations of Geographic Information Systems 4 Credits**Grading Scheme:** Letter Grade

Geographic Information Systems (GIS) as the technology for creation, modification, display, and analysis of spatial information. Develops knowledge of GIS, competence in geographic databases, and familiarity with computer software and hardware.

Prerequisite: Sophomore standing or higher.**GIS 4037 Digital Image Processing 4 Credits****Grading Scheme:** Letter Grade

Introduces the theory and application of digital imagery data in geographical research with a hands-on, lab-based approach.

Prerequisite: Junior standing or higher.**GIS 4102C GIS Programming 3 Credits****Grading Scheme:** Letter Grade

Introduces basic programming concepts; instruction in popular programming languages for geospatial processing, applications, and modeling in ArcGIS environment.

Prerequisite: GIS 3043C or equivalent.**GIS 4113 Introduction to Spatial Networks 3 Credits****Grading Scheme:** Letter Grade

Many phenomena of interest in physical, social and cyber environments can be thought of as networks within geographic context. Teaches methods for analyzing these spatial networks, and introduces their applications in geography, transportation, hydrology, epidemiology, social science, etc.

Prerequisite: Entry level knowledge of statistics or instructor permission. Prior experience with ArcGIS is preferred.**HFT 4442 Artificial Intelligence Revolutions and Applications in Tourism, Hospitality, and Events 3 Credits****Grading Scheme:** Letter Grade

A foundational examination of the implications of the artificial intelligence revolution (AI) in the tourism, hospitality, and event industry. Content includes analyses of AI applications in booking, transportation, theme parks, destination and attraction marketing, economic, social, cultural, and environmental impacts, as well as motivators to travel.

Prerequisite: Junior or Senior Standing.**HUN 4446 Nutrition and Disease: Part 2 3 Credits****Grading Scheme:** Letter Grade

Part two of the sequence that focuses on the biochemical and pathophysiological bases of disease/conditions that require specialized nutrition support/medical nutrition therapy.

Prerequisite: HUN 4445 and (BCH 3025 or BCH 4024) and (PCB 4723C or APK 2105C).**Corequisite:** DIE 4246.**HUN 4813C Laboratory Techniques in Molecular Nutrition 3 Credits****Grading Scheme:** Letter Grade

Laboratory techniques relevant to the study of nutrition, ranging from biochemistry, molecular biology, genomics and bioinformatics.

Prerequisite: CHM 2211 and CHM 2211L;**Corequisite:** BCH 3025 or BCH 4024.**IDS 2935 Special Topics 1-3 Credits****Grading Scheme:** Letter Grade

Introduces selected interdisciplinary topics. Content varies from term to term.

AI Policy and Policies, and Policing | 3 credits

Robots: Threat or Opportunity | 3 credits

Finding your Voice Era of AI | 3 credits

ISM 3004 Computing in the Business Environment 4 Credits

Grading Scheme: Letter Grade

Presents fundamental concepts from two perspectives: the individual business computer user and the corporate business computing environment. Introduces common business computing applications; this is not a hands on applications training course. Students use their existing computer skills to complete assignments.

Prerequisite: basic skills for Microsoft Word, PowerPoint, and Excel.

ISM 3013 Introduction to Information Systems 4 Credits

Grading Scheme: Letter Grade

Introduces the role of information systems and technology in an organization with a focus on the use of Access and Excel to solve business problems. Receive the knowledge necessary to earn Microsoft certifications in Access and Excel.

Prerequisite: MAC 2311 or MAC 2233, and sophomore standing.

JOU 3365 Artificial Intelligence in Media and Society 3 Credits

Grading Scheme: Letter Grade

Gain an understanding of artificial intelligence as it applies to the media professions, including journalists reporting on AI. Explore developments in AI technologies as covered by the mass media. Learn to detect exaggeration in descriptions of AI's promise and potential risks and dangers.

Prerequisite: Junior standing or higher.

LAA 1330 Site Analysis 3 Credits

Grading Scheme: Letter Grade

Inventory, analysis and evaluation of site development procedures; emphasis on landscape ecology.

MAN 4504 Operations and Supply Chain Management 4 Credits

Grading Scheme: Letter Grade

Managerial concepts and quantitative tools required in the design, operation, and control of production systems and their relationship to business functions.

Prerequisite: BUL 4310 and FIN 3403 and GEB 3373 and MAC 2233 or MAC 2311 and MAN 3025 and MAR 3023 and QMB 3250 and STA 2023 and (Business major or Accounting major)

MET 4410 Radar and Satellite Meteorology 3 Credits

Grading Scheme: Letter Grade

Overview of radar and satellite remote sensing as used in the atmospheric sciences, including the principles of atmospheric radiative transfer, the retrieval of atmospheric variables, and emphasis on geospatial interpretation of imagery for different weather systems.

Prerequisite: PHY 2049 and MET 3503.

MMC 3420 Consumer and Audience Analytics 3 Credits

Grading Scheme: Letter Grade

Provides practical analytical skill-sets, benefiting those who plan careers in analytics/research, social media, media business, advertising/marketing, and public relations.

Prerequisite: Junior standing or higher.

PCB 2441 Biological Invaders 3 Credits

Grading Scheme: Letter Grade

Introduces plants and animals that are invading Florida and the US. Why biological invaders are second only to habitat destruction as threats to natural ecosystems, what makes some species invasive, how to control or prevent invasions, where international commerce may be regulated, and who is affected by such issues.

Attributes: General Education - Biological Science

PHC 3793 Higher Thinking for Healthy Humans: AI in Healthcare and Public Health 3 Credits

Grading Scheme: Letter Grade

Covers history, foundational concepts and methods on artificial intelligence (AI), focusing on public health and healthcare applications, including hands-on practice on graphical/highlevel AI software. The course neither provides advanced statistical/machine learning training nor programming.

Prerequisite: STA 2023 or equivalent.

PHI 3681 Ethics, Data, and Technology 3 Credits

Grading Scheme: Letter Grade

Addresses ethical issues related to data science, algorithmic decision-making, and artificial intelligence. Pairs theoretical discussions of ethics, economics, and policy-making with concrete issues in emerging technologies.

Prerequisite: Sophomore standing or higher or (PHI 210 or PHI 2100 or PHI 2630, with a minimum grade of C) or (philosophy major or minor) or data science major.

PLS 3223 Plant Propagation 2 Credits

Grading Scheme: Letter Grade

Principles, practices and physiological aspects of the propagation of horticultural and agronomic crops by cuttage, graftage, seedage, micropropagation and other methods.

Prerequisite: BOT 2010C or BSC 2010;

Corequisite: PLS 3223L.

PLS 3223L Plant Propagation Laboratory 1 Credit**Grading Scheme:** Letter Grade

Methods of propagating by seeds, bulbs, divisions, layering, cuttings, budding, grafting and micropropagation in a hands-on environment.

Prerequisite: BOT 2010C or BSC 2010.**PSB 4342 Introduction to Cognitive Neuroscience 3 Credits****Grading Scheme:** Letter Grade

The biological foundations of human cognition.

Prerequisite: PSB 3340 or instructor permission.**QMB 3250 Statistics for Business Decisions 4 Credits****Grading Scheme:** Letter Grade

Correlation and linear regression, model building, multiple regression, analysis of variance, time series analysis and decision analysis. Regression modeling with computer applications for business problems.

Prerequisite: STA 2023. Open only to students who need this course for their major or who have permission from the WCBA.**QMB 3302 Foundations of Business Analytics & Artificial Intelligence (AI) 4 Credits****Grading Scheme:** Letter Grade

This course is designed to introduce students to the basics of data analytics and machine learning using the powerful programming language Python. Students will learn Python basics, as well as how to write programs and use Python to solve real world problems.

Prerequisite: MAC 2233 OR MAC 2311.**QMB 4701 Managerial Operations Analysis 1 2 Credits****Grading Scheme:** Letter Grade

Introduces the concepts and applications of management science; become more confident in understanding and using deterministic analytic models.

Prerequisite: MAC 2233 and STA 2023.**QMB 4702 Managerial Operations Analysis 2 2 Credits****Grading Scheme:** Letter Grade

Overview of stochastic applications of management science; learn stochastic modeling techniques and introductory visual basic.

Prerequisite: QMB 4701.**RTV 4700 Media Law and Policy 3 Credits****Grading Scheme:** Letter Grade

Introduction to the laws and regulations affecting the past, present, and future of communication technology, emphasizing free expression, privacy, defamation and intellectual property.

Prerequisite: (RTV 2100 or MMC 2100) and RTV 3001 with minimum grade of C.**WIS 4570C Wildlife Behavior and Conservation 3 Credits****Grading Scheme:** Letter Grade

Concise, current, and thorough grounding to the field (theory, practice, and relevance) of animal behavior, with a strong focus on applications of wildlife behavior to achieve successful wildlife conservation gains.

Prerequisite: BSC 2010**WST 4002 Data Feminisms 3 Credits****Grading Scheme:** Letter Grade

Draws from critical data and algorithm studies and feminist science and technology studies to develop critical tools of inquiry needed to approach data within a context of racialized, gendered, colonial, and classed systems of power. Combines practical data workshops with critical readings to analyze data across key uses in domains such as healthcare, security apparatuses, carceral systems, and digital infrastructures.

Prerequisite: Sophomore standing or higher.