University of Tennessee, Chattanooga 2025-2026 Undergraduate Catalog

Course Descriptions

Contract All Courses |

Courses certified as satisfying General Education Requirements are identified in the course title with a two letter category abbreviation. General Education categories are listed below.

Writing and Communication (WC) Humanities and Fine Arts (HF) Natural Science (LL, LC & LB, NL)

Behavioral and Social Science (SB) Quantitative Reasoning (QR) Individual and Global Citizenship (CZ)

Philosophy

PHIL 2010 - Introduction to Philosophy (HF)

(3) Credit Hours

An introduction to the nature of philosophical thinking through the exploration of a selection of classic philosophical problems such as the possibility of knowledge, the existence of God, the problem of evil, the nature of the human mind, or the possibility of freedom. Selection of problems varies from year to year. Alternate years.
General Education Category: Humanities and Fine Arts

PHIL 2110 - Logic, Language, and Evidence

(3) Credit Hours

An examination of accepted forms of reasoning and of the varied ways in which language functions; fallacy, definition, metaphor, and theories of meaning; examples from such areas as science, law, politics, theology, and philosophy; classical and symbolic logic; deductive techniques; induction and deduction contrasted. Fall semester.

PHIL 2120 - Introduction to Asian Philosophy (CZ or HF)

(3) Credit Hours

An introduction to some of the foundational texts and figures of Chinese, Indian, and Buddhist philosophical traditions from ancient times to the contemporary world. May be registered as REL 2120. No credit in both PHIL 2120 and REL 2120.
General Education Category: Individual and Global Citizenship or Humanities and Fine Arts

PHIL 2210 - Introduction to Ethics (HF)

(3) Credit Hours

An introduction to the field of ethics, including important ethical theories, metaethical considerations, and select issues in applied ethics.
General Education Category: Humanities and Fine Arts

PHIL 2240 - Ethics and the Professions (HF)

(3) Credit Hours

An examination of ethical issues and principles related to problems and standards in the professions. Special attention to professional codes and case studies in relation to traditional and contemporary moral philosophy.Summer semester.
General Education Category: Humanities and Fine Arts

PHIL 2250 - Biomedical Ethics (HF)

(3) Credit Hours

An examination of moral and ethical issues that arise in both the practice of medicine and in medical research.
General Education Category: Humanities and Fine Arts

PHIL 2260 - Sports Ethics

(3) Credit Hours

An examination of ethical issues that arise in the context of sports. Topics considered include the nature of sport, cheating and fair play, performance enhancing drugs, violence in sports, gender equality, commercialism, and the value placed on sports in contemporary society.

PHIL 2270 - Environmental Ethics (HF)

(3) Credit Hours

This course explores humanity's ethical relationships to the natural world. After a brief introduction to ethical theories, key concepts and debates in environmental ethics are examined, followed by a discussion of several environmental issues and their proposed solutions. At the end of the course, students will apply what they have learned by collaborating with a local non-profit organization on a community engagement project. Spring semester.
General Education Category: Humanities and Fine Arts

PHIL 2310 - Existentialism (HF)

(3) Credit Hours

A survey of existentialist philosophy and literature. Extensive reading and writing. Offered yearly.
General Education Category: Humanities and Fine Arts

PHIL 2350R - Topics in Popular Culture, Philosophy, and Religion (HF)

(3) Credit Hours

An introduction to the study of philosophy and/or religious studies through popular culture. May include film, television, novels, short stories, comics, games, music, comedy, podcasts, social media, or other aspects of popular culture in genres such as horror, science fiction, fantasy, detective fiction, art film, mainstream fiction, etc. Philosophical and religious topics vary, but may include knowledge, reality, value, meaning, reasoning, personal identity, history of philosophical and religious traditions, religious experience, or the place of philosophy and religion in society. Assignments may include creative projects, such as filmmaking, fiction writing, etc. with an accompanying academic reflection. May be registered as REL 2350R
. No credit in both PHIL 2350R and REL 2350R
.
General Education Category: Humanities and Fine Arts

PHIL 2999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

PHIL 3110 - Symbolic Logic

(3) Credit Hours

An introduction to techniques of modern formal logic, including those of sentential logic and predicate logic with relations, identity, and functions. The course will also consider some important methatheoretic results of first order logic (e.g., soundness and completeness) and select issues in the philosophy of logic.

PHIL 3220 - Ethical Theory

(3) Credit Hours

A critical analysis of contemporary ethical theories. Emphasis on the writings of philosophers such as Moore, Stevenson, Dewey, Rawls, Baier, Hare, and Searle. Alternate years.

PHIL 3330 - Philosophy of Religion

(3) Credit Hours

A philosophical examination of religion, including traditional and modern arguments for the existence and nature of God, the nature of religious experience and belief, and the functions of religious language. Alternate years. May be registered as REL 3330
. Credit not allowed in both PHIL 3330 and REL 3330
.

PHIL 3360 - Aesthetics

(3) Credit Hours

A study of the nature and value of art, of human creativity, and of aesthetic response. Close attention to theoretical analysis and to the interpretation and critique of important artistic achievements. On demand.

PHIL 3430 - Philosophies of India

(3) Credit Hours

A survey of the philosophical traditions of the Indian subcontinent focusing on classical traditions, especially orthodox Brahmanical (Hindu) schools such as Nyāya, Yoga, and Vedānta as well as heterodox schools such as Buddhism, Jainism, and materialism. Some coverage of contemporary Indian thought such as Gandhi, Ambedkar, feminism, and postcolonial theory. Topics may include the self, knowledge, skepticism, the nature of reality, ethics, rebirth, theism, atheism, happiness, and the meaning of life. May be registered as REL 3430
. No credit in both PHIL 3430 and REL 3430
.

PHIL 3450 - Epistemology

(3) Credit Hours

A critical examination of the nature of knowledge and the philosophical problems concerning skepticism; knowledge of the self, material objects, other minds; the past, present, and future; universal and necessary truth. Selections from both historical and recent writings. Alternate years.

PHIL 3510 - Ancient Greek and Roman Philosophy

(3) Credit Hours

Selections from the pre-Socratic through the late Greco-Roman writers, including Plotinus. Emphasis on Plato and Aristotle. Fall semester.

PHIL 3520 - Medieval Philosophy

(3) Credit Hours

This course will trace the development of philosophy from late Antiquity through the High Middle Ages. Texts will be drawn from medieval Christian, Jewish, or Muslim authors. May be registered as REL 3520
. Credit not allowed in both PHIL 3520 and REL 3520
.

PHIL 3530 - Modern European Philosophy

(3) Credit Hours

Rationalism and empiricism as developed by leading thinkers; selections from chief representatives from Hobbes and Descartes through Kant. Spring semester.

PHIL 3999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

PHIL 4300 - Nietzsche, Marx, and Freud

(3) Credit Hours

This course explores three of the greatest and most controversial European thinkers since 1800. This course overviews their main theories and how they present, in various ways, challenges to certain traditional views of humans as rational beings. It also considers the political ramifications of each thinker's thought.

PHIL 4500 - Phenomenology, Postmodernism, and Postcolonialism

(3) Credit Hours

Phenomenology, Postmodernism, and Postcolonialism will examine the tradition and legacy of 20th and 21st century European philosophies and theories. It will investigate concerns about lived experience, the independence of the sciences, the role of the author, the status of truth, and the legacy of colonialism and imperialism.

PHIL 4830 - Feminist Theory

(3) Credit Hours

A history of feminist theory from the eighteenth century to the present. Extensive reading, papers. Maybe registered as HUM 4830 or WGSS 4830
. Credit allowed in only one of the three courses.

PHIL 4840 - Values and the Environment

(3) Credit Hours

An examination of the personal and social values at issue in the environmental problems of urban and nonurban regions. Attention to the emerging concern for an environmental ethic. Fall semester alternate years. Prerequisites: ESC 1500
or Department Head approval. May be registered as ESC 4840
. Credit not allowed in both PHIL 4840 and ESC 4840
.

PHIL 4900R - Philosophy Internship

(3) Credit Hours

Supervised working experience in a professional situation. Maximum 6 hours credit. Every semester. Philosophy Major, Philosophy-Pre-Law, Philosophy-Pre-Health, Philosophy & Religion, or Religion major, or Department Heal approval.

PHIL 4910R - Studies in Philosophy

(3) Credit Hours

A seminar or tutorial for the intensive consideration of one philosophical problem, movement, or figure. On demand.

PHIL 4920R - Topics in World Philosophy

(3) Credit Hours

A seminar or tutorial covering philosophical traditions from regions such as Africa, the Americas, Asia, Australasia, Europe, the Middle East, and the Pacific. Traditions and topics covered vary, but at least half the content of the course will come from outside the traditional Western canon. On demand. Lecture 3 hours.

PHIL 4930 - Topics in Philosophy of Law

(3) Credit Hours

A philosophical examination of select legal topics, such as the nature of law, the obligation to obey the law, the relationship of law and morality, crime and punishment, and issues in family law. Spring semester. Lecture 3 hours.

PHIL 4940 - Topics in the Philosophy of Health, Illness, and Medicine

(3) Credit Hours

A survey of central philosophical theories of health, illness, and mental disorder as well as a critical examination of the possibilities and limits of medicine.Fall semester. Lecture 3 hours.

PHIL 4950 - Topics in Philosophies of Art & Nature

(3) Credit Hours

Though they are often thought of in opposition, art and nature and deeply intertwined, both conceptually and in practice. Art is a cultural product—something created by human intention and design, while nature is thought to be occurring of its own accord—something that exists independently of human design and control. However, over time, the intermingling of nature and culture has become increasingly complex, and this has important consequences for both society and ecological systems. This course explores significant philosophies of art and nature in the history of philosophy and/or contemporary theories of environmental aesthetics and the role of art in environmental movements in order to understand these consequences more deeply.

PHIL 4994R - Senior Thesis in Philosophy

(1-4) Credit Hours

Individual research based on the student's topic for the senior thesis and under the supervision of a department faculty member. Must be taken for at least 3 hours in one semester by all majors. Must submit an Individual Studies/Research Contract to the Registrar's Office at the time of registration. Every semester. Prerequisites: Department Head approval.

PHIL 4995R - Departmental Thesis

(1-3) Credit Hours

A two-semester research or creative project resulting in a thesis under the supervision of a faculty member and with the approval of the Honors College. On demand. Prerequisites: Student must coordinate with Honors College to submit a Thesis Contract to get registered for this course. Restricted to Sophomore standing or higher.

PHIL 4997R - Research

(1-9) Credit Hours

Enables students to conduct independent research. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Research contract to get registered for the course. Restricted to Sophomore standing or higher.

PHIL 4998R - Individual Studies

(1-9) Credit Hours

Enables students to study selected topics in depth. Must be taken for at least three hours in one semester by all majors. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Individual Studies contract to get registered for the course. Restricted to Sophomore standing or higher.

PHIL 4999R - Group Studies

(1-9) Credit Hours

Department may have additional prerequisite requirements. On demand.

Physical Therapy

Please refer to the UTC Graduate Catalog for a listing of the professional level courses offered in the Physical Therapy curriculum.

PHYT 3020 - Medical Terminology for Health Professionals

(2) Credit Hours

This course is designed for students interested in the medical and paramedical fields. Utilizing web-assisted instruction, students will study medical terminology related to the major body systems. Emphasis will include the use of medical word parts, pronunciation, spelling and the definitions of key pathology, diagnostic and treatment procedures terms.

PHYT 3050 - Ethics for Health Care Professionals (HF)

(3) Credit Hours

Designed to introduce pre-health professional students to ethical theories and concepts, assist in identifying potential ethical dilemmas, and provide a system for ethical analysis. Current issues in health care ethics will be discussed throughout the course. Web-assisted technology will be utilized to accomplish the course objectives.
General Education Category: Humanities and Fine Arts

Physics

PHYS 1030 - General Physics - Mechanics and Heat (LC)

(3) Credit Hours

Algebra-based introduction to forces and uniform motion, conservation principles, sound, and thermodynamics, with applications to problems of modern science and technology. Lecture 3 hours. Prerequisites: MATH 1720
, or MATH 1730
, or MATH 1799
, or MATH 1830
with minimum grade of B, or MATH 1950
, or a score of 28 or higher on the ACT Math or Department Head approval. Pre or Corequisites: PHYS 1030L
, or Department Head approval.
General Education Category: Natural Science Lecture

PHYS 1030L - General Physics Laboratory - Mechanics and Heat (LB)

(1) Credit Hours

Laboratory to accompany PHYS 1030
. Experiments investigate various aspects of forces and uniform motion, conservation principles, sound, and thermodynamics. Laboratory 2 hours. Prerequisites: MATH 1720
, or MATH 1730
, or MATH 1799
, or MATH 1830
with minimum grade of B, or MATH 1950
, or a score of 28 or higher on the ACT Math or Department Head approval. Pre or Corequisites: PHYS 1030
or Department Head approval. Laboratory/studio course fee will be assessed.
General Education Category: Natural Science Lab

PHYS 1040 - General Physics - Electromagnetism and Optics (LC)

(3) Credit Hours

Algebra-based introduction to classical electricity and magnetism, optics, and the concepts of modern physics. Lecture 3 hours. Prerequisites: PHYS 1030
and PHYS 1030L
, or Department Head approval. Pre or Corequisites: PHYS 1040L
, or Department Head approval.
General Education Category: Natural Science Lecture

PHYS 1040L - General Physics Laboratory - Electromagnetism and Optics (LB)

(1) Credit Hours

Laboratory to accompany PHYS 1040
. Experiments investigate various aspects of electromagnetism, electrical currents, instrumentation, optics, and radioactivity. Laboratory 2 hours. Prerequisites: PHYS 1030
and PHYS 1030L
or Department Head approval. Corequisites: PHYS 1040
or Department Head approval. Laboratory/studio course fee will be assessed.
General Education Category: Natural Science Lab

PHYS 1250 - The First Year Experience in Physics

(1) Credit Hours

An introduction to the college experience for first-year students at UTC and the aspects needed for a successful transition from high school to college. This includes an introduction to the department, successful learning techniques for physics, and expectations for academic success. Required for majors with fewer than 30 earned hours. Recommended during the initial semester for students who enter UTC with fewer than 15 hours. Fall semester.Lecture 1 hour. Open to freshmen.

PHYS 1350 - Introduction to Data Analysis and Python Programming for STEM students

(3) Credit Hours

Introduction to data analysis and programming concepts and fundamentals using Python computer language with emphasis on scientific applications. Spring semester.Prerequisites: MATH 1730
, or MATH 1799
, or MATH 1830
, or MATH 1950
with minimum grades of C, or a score of 26 or higher on the ACT Math, or Department Head approval.

CHEM 1110
, or PHYS 1030
, or PHYS 2300
, with minimum grades of C, or CHEM 1050
with a minimum grade of B, or Department Head approval.

PHYS 1999R - Special Projects

(1-9) Credit Hours

Individual or group projects. Cumulative limit of 4 hours.On demand.Prerequisites: Department Head approval.

PHYS 2300 - Principles of Physics - Mechanics and Heat (LC)

(3) Credit Hours

Calculus-based introduction to the laws of classical dynamics, kinematics, and thermodynamics, with applications to simple physical systems. Lecture 3 hours. Pre or Corequisites: MATH 1950
with a minimum grade of C, PHYS 2300L
, or Department Head approval.
General Education Category: Natural Science Lecture

PHYS 2300L - Principles of Physics Laboratory-Mechanics and Heat (LB)

(1) Credit Hours

Laboratory to accompany PHYS 2300
. Experiments investigate basic laws of motion, conservation principles, waves and oscillations, and heat measurements with emphasis given to error analysis. Laboratory 2 hours. Corequisites: PHYS 2300
or Department Head approval. Pre or Corequisites: MATH 1950
with a minimum grade of C, or Department Head approval. Laboratory/studio course fee will be assessed.
General Education Category: Natural Science Lab

PHYS 2310 - Principles of Physics - Electricity and Magnetism (LC)

(3) Credit Hours

Calculus-based introduction to electric and magnetic fields, electric currents, electromagnetic induction and waves. Lecture 3 hours. Prerequisites: ENME 1030
, or PHYS 1030
and PHYS 1030L
, or PHYS 2300
and PHYS 2300L
or Department Head approval. Pre or Corequisites: MATH 1960
with minimum grade of C, PHYS 2310L
, or Department Head approval.
General Education Category: Natural Science Lecture

PHYS 2310L - Principles of Physics Laboratory - Electricity and Magnetism (LB)

(1) Credit Hours

Laboratory to accompany PHYS 2310
. Experiments investigate basic electronic circuitry and electromagnetic induction, with emphasis given to error analysis. Laboratory 2 hours. Corequisites: PHYS 2310
or Department Head approval. Pre or Corequisites: MATH 1960
with minimum grade of C, or Department Head approval. Laboratory/studio course fee will be assessed.
General Education Category: Natural Science Lab

PHYS 2320 - Principles of Physics - Optics and Modern Physics

(3) Credit Hours

Calculus-based survey of principles of optics, and of the early conceptual advances in 20th-century physics: the Bohr atom, quantum theory, relativity, nuclear physics and elementary particles. Lecture 3 hours. Prerequisites: ENME 1030
, or PHYS 1030
and PHYS 1030L
, or PHYS 2300
and PHYS 2300L
, or Department Head approval. Corequisites: PHYS 2320L
laboratory or Department Head approval. Pre or Corequisites: MATH 1920 or MATH 1960
with minimum grade of C, or Department Head approval.

PHYS 2320L - Principles of Physics Laboratory - Optics and Modern Physics

(1) Credit Hours

Laboratory to accompany PHYS 2320
. Experiments investigate geometrical optics, interference and diffraction and radioactivity, with emphasis given to error analysis. Laboratory 2 hours. Prerequisites: ENME 1030
, or PHYS 1030
and PHYS 1030L
, or PHYS 2300
and PHYS 2300L
, or Department Head approval.Corequisites: PHYS 2320
or Department Head approval. Pre or Corequisites: MATH 1920 or MATH 1960
with minimum grade of C, or Department Head approval. Laboratory/studio course fee will be assessed.

PHYS 2999R - Group Studies

(1-9) Credit Hours

On demand.Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

PHYS 3030 - Basic Electronics

(4) Credit Hours

Review of simple DC and AC circuitry; applications of diodes, transistors, and operational amplifiers; introduction to digital electronics using transistor-transistor logic integrated circuits and their applications. Lecture 3 hours, laboratory

2 hours. Prerequisites: PHYS 1040
and PHYS 1040L
or PHYS 2310
and PHYS 2310L
; and MATH 1920 or MATH 1960
; or Department Head approval. Corequisites: PHYS 3030L or Department Head approval. Laboratory/studio course fee will be assessed.

PHYS 3070 - Optics

(4) Credit Hours

Basic aspects of geometrical and physical optics, including interference, diffraction, and polarization; optical systems; wave equations and superposition; laser basics. Lecture 3 hours, laboratory 2 hours. Prerequisites: PHYS 2310
and PHYS 2310L
, or PHYS 2320
and PHYS 2320L
, or PHYS 1040
and PHYS 1040L
; and MATH 1920 or MATH 1960
; or Department Head approval. Corequisites: PHYS 3070L or Department Head approval. Laboratory/studio course fee will be assessed.

PHYS 3110 - Introduction to Thermal Physics

(4) Credit Hours

Laws of thermodynamics, kinetic theory, and statistical mechanics with applications to basic thermodynamic systems. Lecture 3 hours, recitation 2 hours. Prerequisites: PHYS 2310
and PHYS 2310L
and PHYS 2320
and PHYS 2320L
, or PHYS 1040
and PHYS 1040L
; and MATH 1920 or MATH 1960
; or Department Head approval. Pre or Corequisites: MATH 2550 or MATH 2560
, or Department Head approval.

PHYS 3410 - Classical Mechanics

(4) Credit Hours

Dynamics of particles and continuous media; Newton's law of motion, conservation laws, generalized coordinates, Lagrange's equations, and the principle of least action; the mechanics of continuous media, wave motion, sound, hydrostatics, rotational and irrotational flow, the equation of continuity, Laplace's equation. Lecture 3 hours, recitation 2 hours. Prerequisites: PHYS 2300
and PHYS 2300L
and PHYS 2310
and PHYS 2310L
, or PHYS 1030

and PHYS 1030L
and PHYS 1040
and PHYS 1040L
; or Department Head approval. Pre or Corequisites: MATH 2450
, or MATH 2550, or MATH 2560
, or Department Head approval.; or Department Head approval.

PHYS 3420 - Electricity and Magnetism

(4) Credit Hours

Basic laws of electromagnetism, electric and magnetic properties of materials, Maxwell's equations, boundary value problems, electromagnetic waves. Lecture 3 hours, recitation 2 hours. Prerequisites: PHYS 3410
, and MATH 2450
, and MATH 2560
; or Department Head approval.

PHYS 3810 - Introduction to Quantum Information Science and Technology

(3) Credit Hours

This course is the introduction part of a four-course QIST certificate program, which is aimed at training non-advanced-degree holding individuals or non-physicists in the art of QIST. A particular focus will be placed on quantum computation, both its hardware and software. At the end of this course, the student should understand the basic differences between quantum and classical information science and computation, have an understanding of the special rules that govern quantum information science. Finally, the student should be able to write in a quantum programming language to implement some prominent quantum algorithms. These sample algorithms will be from a selected suite chosen for its utility and pedagogy. Spring semester.Prerequisites: PHYS 1350
or CPSC 1100
, and MATH 2200
. May be registered as PHYS 3810 or CPSC 3810
. Credit allowed in only one of the two courses.

PHYS 3900R - Internship Experience

(1-6) Credit Hours

An individualized field experience in a physics career-relevant setting providing students with the opportunity to apply theory, expand knowledge, determine additional learning needs, explore careers, and develop a public awareness and an appreciation of diversity. Required modules/seminars provide a theoretical basis for learning and integrating the internship. May be repeated to a maximum of 12 hours with approval.Clinical 3 clock hours per credit hour.Prerequisites: Completion of two 3000- or 4000-level courses in Physics. Students must also submit a course application with field supervisor, faculty supervisor, and Department Head.Satisfactory/No Credit.

PHYS 3980 - Methods of Experimental Physics I

(3) Credit Hours

Experimental methods based on classical physics experiments, selected from such topics as harmonic motion, gravitation, measurement of thermodynamic properties, electrical and magnetic measurements, optics, thermodynamics, and materials science. Lecture 1.5 hours, laboratory 3 hours. Prerequisites: PHYS 2310 and PHYS 2310L and PHYS 2320 and PHYS 2320L, or PHYS 1040 and PHYS 1040L; and MATH 2450; or Department Head approval. Pre or Corequisites: PHYS 3410, or Department Head approval. Laboratory/studio course fee will be assessed.

PHYS 3990 - Methods of Experimental Physics II

(3) Credit Hours

Experimental methods based on modern physics experiments, selected from such topics as atomic emission and absorption spectra, the Franck-Hertz experiment, the Stern-Gerlach experiment, quantum optics, electron-spin resonance, nuclear magnetic resonance, X-ray diffraction, and nuclear radiation measurements (utilizing Geiger-counters and multichannel analyzers). Lecture 1.5 hours, laboratory 3 hours. Prerequisites: PHYS 2310 and PHYS 2310L and PHYS 2320 and PHYS 2320L; or PHYS 1040 and PHYS 1040L; or Department Head approval. Pre or Corequisites: MATH 2450 or Department Head approval. Laboratory/studio course fee will be assessed.

PHYS 3999R - Group Studies

(1-9) Credit Hours

On demand.Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

PHYS 4000R - Physics Seminar

(1) Credit Hours

Reports and reviews of selected physics research, including the abstracting of publications. Cumulative limit of 2 hours. On demand.Enrollment limited to Juniors or above or approval of the Department Head.

PHYS 4110 - Introduction to Quantum Mechanics

(3) Credit Hours

Basic elements and principles of quantum physics: probability waves, the Schrodinger equation, expectation values and operator formalism, the hydrogen atom, radiation processes. Prerequisites: PHYS 2310 and PHYS 2310L

and PHYS 2320
and PHYS 2320L
, or PHYS 1040
and PHYS 1040L
; and MATH 2450
or MATH 2550 or MATH 2560
; or Department Head approval.

PHYS 4120 - Nuclear Physics

(3) Credit Hours

Theory of nuclear structure; nuclear radiation characteristics; the interaction of radiation with matter; nuclear binding forces; the control and use of nuclear radiation. Prerequisites: PHYS 2310
and PHYS 2310L
and PHYS 2320
and PHYS 2320L
, or PHYS 1040
and PHYS 1040L
; and MATH 2450
, or MATH 2550, or MATH 2560
; or Department Head approval.

PHYS 4250 - Computer-Based Materials Development in Science

(3) Credit Hours

Basic principles and practice of developing computer-based simulation for science and education. Projects to be chosen from a pool of topics in a specific area of science. Each module to include documentation, a tutorial, a pretest, a post test, explanatory material, a question set, a problem set, a graphics segment, etc. Modules to be prepared to publication standards. Enrollment limited to Juniors and Seniors, or Department Head approval.

PHYS 4300 - Physics of Living Systems

(3) Credit Hours

Introduction to basic biophysical processes occurring at the cellular level. Emphasis on energy transformations, and experimental techniques of biophysics. Spring semester.Prerequisites: PHYS 2310
and PHYS 2310L
and PHYS 2320
and PHYS 2320L
, or PHYS 1040
and PHYS 1040L
; and PHYS 3110
or CHEM 1120
; and MATH 1960
; or Department Head approval. Corequisites: PHYS 4300L or Department Head approval.

PHYS 4300L - Physics of Living Systems Laboratory

(1) Credit Hours

Laboratory to accompany PHYS 4300
. Laboratory exercises will center on computational and experimental methods biophysicists routinely use to qualitatively and quantitatively investigate properties of biological macromolecules. Corequisites: PHYS 4300
or Department Head approval. Laboratory/studio course fee will be assessed.

PHYS 4810 - Physics Concepts in Quantum Information Science and Technology

(3) Credit Hours

We will study the physics concepts of superposition and entanglement in a thorough and rigid manner in this course. Knowing Schrödinger equation is absolutely necessary to understand physical quantum computation hardware or analog quantum algorithms. The course includes 4 experimental sessions for you to gain hands-on experience with quantum physics topics. Spring semester.Prerequisites: PHYS 1040
/PHYS 1040L
or PHYS 2320
/PHYS 2320L
, MATH 2450
, MATH 2560
, PHYS 3810
with a C or better, or Department Head approval.

PHYS 4995R - Departmental Thesis

(1-3) Credit Hours

A two-semester research or creative project resulting in a thesis under the supervision of a faculty member and with the approval of the Honors College. On demand.Prerequisites: Student must coordinate with Honors College to submit a Thesis Contract to get registered for this course. Restricted to Sophomore standing or higher. Laboratory/studio course fee will be assessed.

PHYS 4997R - Research

(1-9) Credit Hours

Enables students to conduct independent research. On demand.Prerequisites: Student must coordinate with a specific faculty member to complete the Research contract to get registered for the course. Restricted to Sophomore standing or higher.Laboratory/studio course fee will be assessed.

PHYS 4998R - Individual Studies

(1-9) Credit Hours

Enables students to study selected topics in depth. On demand.Prerequisites: Student must coordinate with a specific faculty member to complete the Individual Studies contract to get registered for the course. Restricted to Sophomore standing or higher.

PHYS 4999R - Group Studies

(1-9) Credit Hours

Department may have additional prerequisite requirements. On demand.

Political Science and Public Service

PSPS 1000 - Introduction to PSPS

(1) Credit Hours

An introduction to political science and the PSPS department through a survey of how scholars think about and engage in contemporary world problems, providing an overview of key concepts and approaches of political analysis and practice. Open only to PSPS major or minor.

PSPS 1010 - American Politics (CZ or SB)

(3) Credit Hours

The foundations, institutions, processes and policies of American national government with attention to the Constitution and such topics as elections, political and civil rights and liberties, federalism, public policy, public opinion, political culture, interest groups, and the role of citizens in governance.
General Education Category: Individual and Global Citizenship or Behavioral and Social Science

PSPS 1020 - World Politics (CZ or SB)

(3) Credit Hours

The evolution, nature, and operation of the contemporary world political system with attention to the behavior of states, the impact of ideology, culture, and domestic politics on foreign policy, the behavior of transnational political and economic actors, the effects of international competition, and the impact of international institutions on promoting cooperation.
General Education Category: Individual and Global Citizenship or Behavioral and Social Science

PSPS 1030 - Controversies in Public Policy (SB)

(3) Credit Hours

Contemporary policy issues in American politics with attention to current problems, proposed solutions, and competing viewpoints.
General Education Category: Behavioral and Social Science

PSPS 1040 - Global Culture and Politics (CZ)

(3) Credit Hours

A study of culture, politics, and society in the non-western world with emphasis on significant intellectual contributions, modes of inquiry, value systems, structures of belief and practices of everyday life.
General Education Category: Individual and Global Citizenship

PSPS 1250 - The First Year Experience in Political Science

(1) Credit Hours

An introduction to the college experience for first-year students at UTC and the aspects needed for a successful transition from high school to college. The course includes exploration into the following: expectations for academic success in the social sciences, learning beyond the classroom, academic and career planning for political scientists, and student engagement resources and opportunities at UTC and within the Chattanooga community. It is recommended that first time college students take this course during the initial semester at UTC with less than 15 hours. Students enrolled in this course will earn one hour of graded, elective credit.Open to freshmen.

PSPS 1905R - Readings in Political Science

(1) Credit Hours

Discussion of a current or seminal book or literature in political science. Recommended for pre-law students or those considering graduate school.Prerequisites: Department Head approval.

PSPS 1930R - Mock Trial Competition

(1) Credit Hours

Selected by competition in the fall, students on the UTC Mock Trial team may earn one credit hour each semester they are on the team and participating in sectional, regional, or national mock trial competitions. Prerequisites: Department Head approval.

PSPS 1999R - Special Projects

(1-9) Credit Hours

Individual or group projects. Prerequisites: Department Head approval.

PSPS 2030 - Statistics for Decision Makers (QR)

(3) Credit Hours

Students learn to conduct and interpret basic statistical analysis with an emphasis on applications in public administration and nonprofit management. Credit not allowed in PSPS 2030 after passing MATH 2100 , MATH 3100 , DATA 2130 , or PSY 2010 . Prerequisites: Math ACT subscore of 22 or higher, or minimum grade of C in one quantitative reasoning general education requirement, or Department Head approval.
General Education Category: Quantitative Reasoning.

PSPS 2051 - American Political Thought

(3) Credit Hours

A study of the major political and constitutional ideas that have influenced the development of the United States since its founding. Recommended for pre-law majors.

PSPS 2110 - American Political Behavior

(3) Credit Hours

This course is an introduction to studying American political behavior. Students will learn how to define and measure public opinion, the process of political socialization, political knowledge and interest, party identification, different conceptualizations of ideology, and polarization. Finally, students will learn about the fundamentals of campaigns and campaign finance and the electoral process at the state, local, and federal levels.

PSPS 2210 - State and Local Government

(3) Credit Hours

Tennessee state and local government and politics with comparisons to government and politics in the other states.

PSPS 2220 - The Presidency

(3) Credit Hours

An examination of the origins and historical development of the American presidency, the institutional context of presidential leadership, and the concept of presidential power.

PSPS 2230 - Congress

(3) Credit Hours

An examination of the U.S. Congress, the legislative process, and the institution's relationship with other political actors, including such key themes as deliberation, policymaking, representation, transparency, and leadership.

PSPS 2300 - Introduction to Judicial Process

(3) Credit Hours

An examination of the role, operation and decision-making processes of the U.S. Supreme Court and lower federal courts. Recommended for pre-law majors.

PSPS 2310 - Justice and the American Trial Process

(3) Credit Hours

An in-depth analysis of the modern trial process in the United States. Emphasis on assessing the weak points of the American judicial system and on preparing an actual mock trial case for argument. Recommended for pre-law majors.

PSPS 2450 - Public Policy Theory

(3) Credit Hours

Introduction to core public policy concepts, theories, models, and processes.

PSPS 2500 - Introduction to Public Administration

(3) Credit Hours

Introduction to the concepts and practices of Public Administration. Designed to give students understanding of public sector administration. This course provides an overview of traditional and contemporary views of public administration.

PSPS 2600 - Introduction to Nonprofit Sector

(3) Credit Hours

Introduction to the nonprofit and voluntary sector in the United States. Examines issues and theories about the existence, forms, and functions of the Nonprofit Sector. Provides an overview of history and modern developments of the Nonprofit Sector.

PSPS 2700 - Comparative Government (CZ or SB)

(3) Credit Hours

An examination of how different societies can be compared and contrasted, with a focus on transformation.
General Education Category: Individual and Global Citizenship or Behavioral and Social Science

PSPS 2800 - International Relations

(3) Credit Hours

An examination of the theoretical, historical and behavioral causes of war and peace. Focus on the role of power, sovereignty, and international law on world politics.

PSPS 2820 - Political Sociology

(3) Credit Hours

Discusses the social organization of political power and how society affects politics and the state, exploring the social dimensions of power and political institutions. Key topics includes elites, social classes, the state, the media, social movements and related organizations, seminal events, and theories that have informed the resulting politics.

PSPS 2999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

PSPS 3000 - Research Methods

(3) Credit Hours

Concepts and methods for empirical research in political science and public service. Required for political science majors.

PSPS 3010 - Career Development

(1) Credit Hours

This course is designed to assist students as they prepare to embark on future career opportunities in political science, public administration, public policy, and nonprofit careers. Students will learn to research job opportunities, prepare career professional materials, network, and conduct professional interviews. Open only to Political Science and Public Service majors.

PSPS 3052 - Early Political Philosophy (HF)

(3) Credit Hours

An introduction to such theoretical concerns of Western political science as sovereignty, rights, justice, property, liberty, and equality. This course emphasizes the ancient philosophers through the Enlightenment, such as given in the works of Sophocles, Plato, Aristotle, through Machiavelli, Hobbes, Locke, and Rousseau.
General Education Category: Humanities and Fine Arts

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Contract All Courses |