

PHI 348 (POS 348) Modern Political Thought (3 crs)

Selections from modern political thinkers, e.g., Machiavelli, Locke, Tocqueville, Rousseau and Nietzsche, will be examined in this course. Special emphasis will be placed on the modern idea of rights, the relationship between politics and philosophy and the role and responsibilities of government in the modern world.

PHI 355 Business Ethics (3 crs)

An exploration of the relationship between the world of business and the values of the larger society in which business operates. An application of ethical principles to issues, such as hiring practices, quality of the work place, conflicts of interest, environmental and consumer issues and the social responsibility of business. Prerequisites: PHI 105 and 205.

PHI 356 Ethics and Public Policy (3 crs)

An application of the principles of ethics to contemporary American institutional structures and public policies, e.g., health care, prison systems, international finance, world trade, foreign policy, war and peace, world hunger, immigration, education and individual rights. Prerequisites: PHI 105 and 205.

PHI 360 Great Thinkers in Philosophy (3 crs)

A close and critical textual examination of a major philosopher, (e.g., Aristotle, Plato, Kant, Heidegger and Marcel). Prerequisites: PHI 105 and 205.

PHI 365 Great Themes in Philosophy (3 crs)

A close and critical examination of a major and continuing theme in philosophy, (e.g., Philosophy of Time, Philosophy and Literature, Philosophy of Freedom, etc.). Prerequisites: PHI 105 and 205.

PHI 485 Senior Seminar in Political and Economic Philosophy (3 crs)

Interdisciplinary, with faculty from each area participating. Prerequisites: PHI 105, 205 and 305.

Physics

Contact Persons: *Joseph R. Busche, Ph.D.*

Peter D. Ehni, Ph.D. (Chair)

John Lynch, Ph.D.

Physics is the science of matter, motion and energy. The physics offerings are designed to provide students with basic scientific knowledge, as well as prepare them for varied goals, including graduate study, industry, teaching and engineering school.

Upon completion of the Physics program, students will be able to demonstrate the ability to:

1. Think critically and solve multi-step problems.
2. Learn new physical principles through self-guided study.
3. Communicate both orally and in written form in a style appropriate for a physicist.
4. Integrate physics into their lives with specific emphasis on moral standards and social consciousness.

Physics offers the following major programs:

1. Physics
2. General Science (Physics)
3. Applied Science (Case Western Reserve University, 3/2)

Core Fulfilling Courses

PHY 104	Physical Science	
PHY 105	General Physics	
PHY 107	Astronomy	
PHY 108	Geology	
PHY 110	Physics I	(4 crs)
PHY 130	Physics for Allied Health	
PHY 131	Earth & Space Science	

Requirements for Physics Major Bachelor of Science Degree

In addition to completing the core curriculum requirements, outlined on pp. 14-15 of this catalog, (plus 6 more already included in courses below) physics majors must complete the following courses:

MAT 111, 112	Calculus I, II	(8 crs)
MAT 211	Calculus III	(4 crs)
MAT 212	Ordinary Differential Equations	(3 crs)
PHY 110, 120	Physics I, II	(8 crs)
PHY 121, 122	Physics Labs I, II	(2 crs)
PHY 241, 242	Engineering Physics I, II (or PHY 243 Statics, PHY 244 Dynamics)	(8 crs)
PHY 311	Modern Physics	(3 crs)
PHY 331, 432	Mechanics I, II	(6 crs)
PHY 341, 442	Electromagnetic Theory I, II	(6 crs)
PHY 435	A, B, C, D Advanced Lab	(4 crs)
PHY	Approved electives	(14 crs)
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		(66 crs)

Special Notes for Physics Major:

1. In specific cases, physics requirements can be modified with faculty approval.
2. Physics majors preparing for graduate study are urged to elect CHE 110, 120, General Chemistry, and CHE 121, 122, General Chemistry Lab, and further advanced MAT courses.

Course Descriptions

Requirements for Physics Minor

Physics minors must complete four upper-division (300 or 400 level) PHY courses approved by the contact person for a minimum of 15 credits.

Requirements for General Science (Physics) Major Degree of Bachelor of Science

This major provides a background in the physical sciences with an emphasis on Physics. In conjunction with the Teacher Preparation Program, the program offers training for a career in K-12 teaching. It also serves as an excellent course of study for those students aspiring to enter the graduate program in physical therapy.

In addition to completing the core curriculum requirements (48 credits plus 9 more already included in the courses below) outlined on pp. 14-15 of this catalog, general science (physics) majors must complete the following courses:

BIO	Approved Electives	(8 crs)
CHE 110, 120	General Chemistry I, II	(8 crs)
CHE 121, 122	General Chemistry Lab I, II	(2 crs)
MAT 111	Calculus I	(4 crs)
MAT	Approved Elective	(4 crs)
CSC	Approved Elective	(3 crs)
PHY 110, 120	Physics I, II	(8 crs)
PHY 121, 122	Physics Lab I, II	(2 crs)
PHY 311	Modern Physics	(3 crs)
PHY	Approved Electives	(17 crs)
		<u>(59 crs)</u>

PHY 104 Physical Science (3 crs)

The goal of this course is scientific literacy in the physical sciences for the nonscience major. The basic principles of Physics and Chemistry are studied. These principles are then applied to the fields of Geology, Astronomy and Meteorology.

PHY 105 General Physics (3 crs)

A one-semester physics course for technology majors. The course is quantitative requiring algebra and trigonometry.

PHY 107 Astronomy (3 crs)

Introduction and historical outline of astronomy and development of physical laws used to describe the solar system, space, stars, galaxies, the universe and some observational techniques.

PHY 108 Geology (3 crs)

Introduction to physical geology, internal structures of the earth, dynamical features, plate tectonics, crust and lithosphere production, balance and movement, oceans, seashore, continents, inland water and ice sheets.

PHY 110, 120 Physics I, II (8 crs)

Concepts and methods of Physics: I; Newtonian mechanics, relativity, harmonic motion, fluids and elasticity, II; thermodynamics, electricity and magnetism, circuits, wave motion, sound and optics. Calculus is taught as needed in this course. Prerequisite: MAT 108 or equivalent.

PHYSICS - Recommended Course Sequence

	Freshman		Sophomore		Junior		Senior	
FALL	FYS 101	1	PHY 241/243	4	PHY 331	3	PHY 341	3
	PHY 110	4	MAT 211	4	PHY 435A	1	PHY 435C	1
	PHY 121	1	RST 106/107	3	PHY Elective	3-4	PHY Elective	3-4
	MAT 111	4	PHI 105	3	MOL	3	Global Persp.	3
	HIS 110	3	LIT 250	3	SSC Elective	3	Elective	3
	ENG 105/110	3			SCI Core	3-4	FAS 20x	2
	Semester total	16		17		16-18		15-16
SPRING	PHY 120	4	PHY 242/244	4	PHY 432 & 435B	4	PHY 442	3
	PHY 122	1	PHY 311	3	FAS 101	1	PHY 435D	1
	MAT 112	4	MAT 212	3	PHY Elective	3-4	PHY Elective	3-4
	HIS 12x	3	PHI 205	3	MOL	3	Electives	6
	LIT 120	3	RST Elective	3	RST/PHI 305	3		
					Elective	3		
	Semester total	15		16		17-18		13-14
Total Credits	31		33		33-36		28-30 125+	

PHY 121, 122 Introductory Physics Labs I, II (2 crs)

To be taken concurrently with PHY 110-120. Experiments designed to supplement the lecture course and to provide proficiency in the methods of measurements, the analysis and presentation of data and the interpretation of results.

PHY 130 (CLS 130) Physics for Allied Health (3 crs)

General physics principles with special emphasis on gas laws, flow principles, fluidics, the use of formulae and how they apply to nuclear medicine technology and respiratory therapy.

PHY 131 Earth and Space Science (3 crs)

A course designed for students who are interested in teaching biology, chemistry, physics, or general science at the intermediate or secondary school level. Topics covered will lead to an understanding of the physical factors that effect the environment, the earth atmosphere and the solar system.

PHY 160 Engineering Orientation (1 cr ea)

A sequence of six one-credit courses, usually spread over four semesters and a summer, as career orientation in both engineering and physics. Treatment of such topics as problem analysis, computer programming and surveying.

PHY 241, 242 Engineering Physics I, II (8 crs)

Vector operations, forces, moments, centroids, structures, friction, moments of inertia, kinetics of particles and rigid bodies in both translation and rotation, mechanical vibrations, electric charge, electric field, Gauss' law, electrical potential, capacitors and dielectrics, current, magnetic field, Ampere's law, Faraday's law.

PHY 243 Statics (4 crs)

Statics of particles and rigid bodies, vector operations, equivalent systems, equilibrium, centroids and center of gravity, analysis of structures, shear and moment diagrams, bending stress and shear stress in structural members, loads, strain, friction and moments of inertia. Concurrently: MAT 112.

PHY 244 Dynamics (4 crs)

This course will stress engineering problems in dynamics including topics, such as kinematics of particles, moments of inertia, rigid bodies in translation and rotation and mechanical vibrations. Prerequisite: PHY 243.

PHY 260 Computer Hardware (3 crs)

Basic electricity and circuit functions, circuits and decisions, semi-conductors (diodes and applications, transistors and applications, other devices); integrated circuits (linear devices and non-linear devices), digital integrated circuits and electronics, numbering systems, digital logic, Boolean algebra, counters and registers and micro-processors. Lab periods are integral to the course. Prerequisites: PHY 110, PHY 120, PHY 121, PHY 122 any computer language course.

PHY 311 Modern Physics (3 crs)

Intermediate treatment, includes: theory of relativity, wave-particle duality, atomic theory, quantum theory of the hydrogen atom, properties of matter, decay and nuclear reactions and elementary particles.

PHY 312 Electronics (4 crs)

D.C. and A.C. circuits, amplifiers, waveform generators and nonlinear devices. Lab periods are integral to the course. Prerequisite: MAT 112.

GENERAL SCIENCE (PHYSICS) - Recommended Course Sequence

	Freshman		Sophomore		Junior		Senior	
FALL	FYS 101	1	PHY Elective	4	PHY Elective	2	PHY Elective	4
	PHY 110	4	CHE 110	4	BIO Elective	4	RST/PHI 305	3
	PHY 121	1	CHE 121	1	PHI 205	3	SSC Elective	3
	MAT 111	3	LIT 250	3	MOL 102	3	Electives	6
	ENG 105 or 110	3	RST 106/107	3	Global Persp.	3		
	HIS 110	3						
	Semester total	15		15		15		16
SPRING	PHY 120	4	PHY 311	3	PHY Elective	4	FAS 20x	2
	PHY 122	1	CSC Elective	3	BIO Elective	4	PHY Elective	4
	MAT Elective	4	CHE 120	4	RST Elective	3	Electives	9
	LIT 120	3	CHE 122	1	MOL 111	3		
	HIS 120	3	PHI 105	3				
	FAS 101	1						
	Semester total	15		15		14		15
	Total Credits	30		30		29		31 121

PHY 316 Optics (4 crs)

The electromagnetic theory of light. Interference, diffraction, resolving power of instruments, polarimetry, dispersion, absorption, scattering and reflection and an introduction to the theory of quantum radiation.

PHY 317 Thermodynamics (3 crs)

An intermediate treatment of thermodynamics: thermodynamic systems, work, equations of state, the first and second laws of thermodynamics, phase changes, entropy and thermodynamic potentials.

PHY 318 Hydrodynamics (3 crs)

An introductory course in hydrodynamics including: laminar flow, Reynolds number, flow patterns, continuity equations, the Navier-Stokes equation, vorticity and viscous flow. Prerequisite: MAT 211, PHY 244.

PHY 319 Statistical Mechanics (2 crs)

The kinetic theory of gases, transport phenomena, various statistics and distribution functions, the partition function and applications to systems.

PHY 331 Mechanics I (3 crs)

Newtonian mechanics, motion of a particle in one, two and three dimensions, the motion of a system of particles, oscillations, gravitation, moving coordinate systems and Lagrange's equations of motion.

PHY 341 Electromagnetic Theory I (3 crs)

Electrostatics, electric fields in matter, magnetic fields and Maxwell's equations.

PHY 421, 422 Mathematical Physics I, II (8 crs)

Supplements the mathematics background of the physics major. I: Taylor's series, Fourier series, Fourier integrals, determinants, matrix theory, Lagrange's equations, Hamilton's principle, partial differentiation, calculus of variations and the gamma, beta and error functions. II: Bessel functions, Legendre polynomials and introduction to tensor analysis, solutions of the wave equation and elements of the theory of complex variables.

PHY 432 Mechanics II (3 crs)

Continuation of PHY 331. Hamilton's equations of motion, approximations, central forces, rigid bodies and waves. Prerequisite: PHY 331.

PHY 435 A, B, C, D Advanced Lab (1 cr each)

A four semester sequence of advanced physics labs for junior and senior physics majors. Lab topics include nuclear physics, x-rays, crystallography, vacuum techniques, thin film deposition, classical mechanics and the classic modern physics experiments. Both written and oral reports will be required.

PHY 442 Electromagnetic Theory II (3 crs)

Continuation of PHY 341. Electrodynamics, electromagnetic waves, radiation, elastic media, elastic waves in three dimensions and heat flow. Prerequisite: PHY 431.

PHY 451, 452 Quantum Mechanics I, II (8 crs)

Heisenberg uncertainty relation, deBroglie's postulate, wave function, time dependent and independent Schrodinger equation, tunneling effect, linear harmonic oscillator, commutators, transition probabilities, Schrodinger and Dirac representations. II: Particle in a central potential, one and multi-electron atoms, spin, addition of angular momenta, approximation methods, fine and hyperfine structure of hydrogen atom and scattering theory.

PHY 486-489 Thesis (variable)

A research topic requiring a detailed report and oral defense. Prerequisite: Senior standing.

Political Science

Contact Person: Chris Scholl, Ph.D.

Requirements for Political Science Major Bachelor of Arts Degree

Upon completion of the Political Science program, students will be able to demonstrate the ability to:

1. Display familiarity with the basic concepts of government and politics.
2. Show a general knowledge of the structure and functions of all levels of government.
3. Explain the philosophical underpinnings of various forms of government, as well as an ability to understand relations among states.
4. View and evaluate the output of the current American political process through a conscious paradigm.
5. Employ a variety of tools to participate at all levels in American politics as opposed to remaining passive observers.

Political Science Majors must complete the following social science core, in addition to completing core curriculum requirements:

POS 110	American Political Process	(3 crs)
INS 111	World Community	(3 crs)
SSC 327	Research Methods	(3 crs)
SSC 415	Statistical Analysis	(3 crs)
SSC 488	Senior Thesis	(3 crs)
SSC 489	Senior Seminar	(3 crs)
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		(18 crs)

In addition to completing the core curriculum and social science core requirements (including senior thesis and seminar and the comprehensive oral examination in SSC 488, 489), all political science majors must complete the following courses:

POS 211	Comparative Politics	(3 crs)
POS 212	Global Politics	(3 crs)
POS 346 or 348	Ancient or Modern Political Thought	(3 crs)
	Five (5) Approved POS Electives	(15 crs)
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		(24 crs)

One course must be taken from each of the following areas:

American Politics: POS 241, POS 242, POS 329, POS 330, POS 340, POS 305, POS 306, POS 473.

International Relations: POS 228, POS 311, POS 316, POS 327, POS 333, POS 334, POS 341.

Political Theory: POS 250, POS 311, POS 346.

Requirements for Political Science Minor

Minors in political science must complete POS 110, INS 111 and five upper-division courses (numbered 200 or above).

Special Note on Double Majors:

In addition to complying with University rules regarding double majors (see p. 16 of this catalog), students completing a double major between criminal justice and political science must write two senior theses.

Special Note on Elective:

The department's contact person must approve the political science elective. The following courses from other disciplines may also satisfy the requirement: CRJ 327 (Comparative Systems of Justice and Social Control), HIS 228 (Latin America in the 20th Century), HIS 250 (Revolution and Ideology), HIS 316 (Rise of the United States as a World Power), HIS 331 (Modern Russia), PHI 346 (Ancient Political Thought), PHI 347 (Medieval Political Thought), PHI 348 (Modern Political Thought) and PHI 349 (Contemporary Political Thought) and WST 355.

Course Descriptions

POS 110 American Political Process (3 crs)

Operations of the American government and their consequences for the population. Policies on management of the economy, defense and foreign policy, poverty, race relations. Roles of the Presidency, bureaucracy, Congress, courts. Nature of elite and mass political ideas and opinions.

POS 211 Comparative Politics (3 crs)

An introduction to comparative politics as an approach and as a body of knowledge. Several aspects of various selected foreign systems will be compared (such as governments, political parties, interest groups, political culture, etc.).

POS 212 Global Politics (3 crs)

This course serves as an introduction to the study of global politics. Different approaches of studying the relations between countries; the forces that motivate countries (nationalism, ideology, etc.); and the instruments available to them (power, international law, etc.) will be discussed. The politics of global issues such as human rights, the environment, population growth and free trade will also be considered. It is recommended that this course be taken prior to other 300-level international relation courses.

POS 228 Latin America in the 20th Century (3 crs)

An examination of Latin America from 1880 to the present. The focus will be on the problems that Latin American countries have encountered in their struggle for economic and political development. Social and cultural aspects of the region will also be examined. Several countries will be selected for in-depth analysis.

POS 241 Public Policy (3 crs)

This course will explore the policy making process in the United States. It will examine how the agendas of policy makers are set, how the policy is formulated and how it is implemented. It will also question who benefits from the policy making process. Topical issues of national policy will be used to illustrate the process. Prerequisite: POS 110.

POS 242 State and Local Government (3 crs)

This course will examine the structure and functions of government at the state and local level. It will compare and contrast the various types of governments that exist across the United States. It will also examine the intergovernmental relationships between the localities, the states and the national government. Prerequisite: POS 110.

POLITICAL SCIENCE - Recommended Course Sequence

	Freshman		Sophomore		Junior		Senior	
FALL	FYS 101	1	RST 106/107	3	PHI 105	3	PHI/RST 305	3
	MOL Core	3	POS 212	3	POS Electives	6	Electives	6
	POS 110	3	POS Elective	3	FAS 20x	2	SSC 415/488	6
	ENG 105/110	3	SSC Core	3	POS 346/348	3		
	MAT Core	3	Elective	3				
	HIS 110	3						
Semester total	16		15		14		15	
SPRING	MOL Core	3	SCI Core	3	SCI Core	3	POS Theory Elective	3
	HIS 120	3	RST Core	3	PHI 205	3	SSC 489	3
	INS 111	3	Electives	6	LIT 250	3	Electives	9
	LIT 120	3	POS Elective	3	SSC 327	3		
	POS 211	3	FAS 101	1	POS Elective	3		
	Semester total	15		16		15		15
Total Credits	31		31		29		30	121

POS 250 (HIS 250) Revolution and Ideology (3 crs)

This course encourages students to come to terms with revolutionary ideas and thinkers in a number of ways. First, the instructor provides the historical background to the epochs when ideas such as Marxism and Fascism appeared. Then students study revolutionary writings to analyze the writers' criticisms of society, suggested methods of change and ultimate goals.

POS 305 The American Presidency (3 crs)

This course will examine the highest political office in the United States of America. Is the President the most powerful person in the world, or is he relatively powerless, depending on other branches of the government to voluntarily do as he wishes? How does a President affect policy? What type of individual makes a good President? The course will focus on six major areas of concern: 1) Presidential Selection; 2) Presidential Power; 3) Presidential Accountability; 4) Presidential Decision-Making; 5) Presidential Character; and 6) Presidential Leadership. Prerequisite: POS 110.

POS 306 The American Congress (3 crs)

This course will examine the development and contemporary workings of the US Congress. It will dissect Congress, looking at its component parts (party leadership, committees, staff), and its internal decision-making process. It will explore Congressional relations with other actors in the policy-making process (interest groups, constituents, the President, executive agencies). It will examine how the structure of the institution, and the incentives provided to its members, greatly impact on how government affects our daily lives. Prerequisite: POS 110.

POS 311 War & Peace:**Philosophical & Political Issues (3 crs)**

An examination of various issues related to war and peace. The focus will be on three general issues: the causes of war; theories of war-avoidance; and various moral questions (i.e., just war, non-violent strategies, etc.).

POS 329 Constitutional Law (3 crs)

Examines the evolution of American national government through the development and interpretation of the U.S. Constitution. Judicial review, separation of powers, commerce power, contracts, taxing, the power to make war and due process are among the topics studied. Prerequisite: POS 110.

POS 330 Civil Rights and Civil Liberties (3 crs)

A companion course to Constitutional Law (POS 329), this course analyzes Bill of Rights guarantees of individual freedom, due process and equal protection interpretations, as well as modern policies flowing from civil rights legislation in areas affecting employment, education and welfare benefits.

POS 333 Global Political Economy (3 crs)

This course focuses on the intersection between politics and economics. Different schools of thought (liberalism, marxism, mercantilism) will be examined in detail. Additional attention is given to free trade and its critics, the global political economy of the environment, food, the newly industrialized countries and North-South relations. Recommended prerequisite: POS 212.

POS 334 International Organization (3 crs)

The historical development of international organizations, their organizational structure and the inherent political processes will be examined. The impact of international organizations on global issues such as conflict, economics, human rights, global resources, population will also be considered. Special attention is given to the United Nations. Recommended prerequisite: POS 212.

POS 340 Issues in American Politics (3 crs)

Analysis of specific topics, depending on student interest and current importance. Prerequisite: POS 110.

POS 341 Global Issues (3 crs)

This is a special topics course dealing with one or more current topics, e.g., hunger, Third World development, international environment politics, U.S.-Latin American relations. Prerequisite: POS 212.

POS 346 Ancient Political Thought (3 crs)

Selections from, e.g., Plato, Aristotle, Xenophon, Thucydides and Aristophanes, will be examined in the course. Special emphasis will be placed upon the relationship between politics and philosophy.

POS 348 Modern Political Thought (3 crs)

Selections from modern political thinkers, e.g., Machiavelli, Hobbes, Locke, Tocqueville, Rousseau, Nietzsche, will be examined in the course. Special emphasis will be placed upon the development of the modern idea of rights, the relationship between politics and philosophy and the role and responsibilities of government in the modern world.

POS 350 Environmental Law and Policy (3 crs)

This course provides an understanding of the political and social dimensions of environmental policy and law in the United States and internationally. Specific subjects of study include the policy process, how various interest groups influence the structure and content of legislation and the types of enforcement used to induce compliance. The course is a forum for in-depth analysis of important environmental movements, legislation and issues including the Clean Water Act, global warming and preservation of the rainforests.

POS 473 Internship (variable credit)

A field experience course in which the student is involved actively in the community under the direction of the Social Science Department. Enrollment requires the approval of the department; a member meets periodically with the student during the internship to examine the relationships between the theoretical concepts found in the assigned readings and the field experience. The number of credits is negotiable.

Professional Communications

(See description of Professional Communication courses in the English, Prof. Communication and Fine Arts section, p. 50)

Psychology

Contact Persons: *C. James Goodwin, Ph.D.*
Joseph Hayden, Ph.D., S.J.
Debra Hull, Ph.D., (Chair)
Bryan Raudenbush, Ph.D.
Cynthia Smith, Ph.D.

The psychology curriculum is designed to discover knowledge of the fundamental principles of behavior. For the psychology major, it offers a thorough preparation for graduate study, as well as human service experience in various community agencies through internships and volunteer work.

Upon completion of the psychology program, students will be able to:

1. Comprehend, evaluate and apply information relevant to understanding the basic principles of human behavior and mental processes.

2. Conduct independent empirical research in psychology, evaluate research outcomes using proper statistical procedures and produce a research report that conforms to guidelines published by the American Psychological Association.
3. Deliver a competent oral presentation on some topic in psychology, using presentation software.

Requirements for Psychology Major Bachelor of Arts Degree

In addition to completing the core curriculum requirements, outlined on pp. 14-15 of this catalog, psychology majors must complete the following courses:

*PSY 110	General Psychology (C+ or better)	(3 crs)
PSY 115	Statistics for the Behavioral Sciences	(3 crs)
PSY 211	Experimental Psychology (C or better)	(4 crs)
PSY 420	History & Systems of Psychology	(3 crs)
PSY 488	Senior Seminar	(3 crs)
PSY	Research Electives (2)	(8 crs)
PSY	Psychology Electives (6)	(18 crs)
*BIO 105, or	Processes of Biology	(3 crs)
115, or	General Biology I	
120	General Biology II	
		(45 crs)

* Core fulfilling

PSYCHOLOGY - Recommended Course Sequence								
	Freshman		Sophomore		Junior		Senior	
FALL	FYS 101	1	PSY 211	4	PSY Research	4	PSY 420	3
	ENG 105/110	3	PSY Elective	3	PSY Elective	3	PSY 488	3
	MOL	3	RST 106/107	3	PHI 205	3	PSY Elective	3
	PSY 110	3	BIO 105/115/120	3	SCI	3	Electives	6
	HIS 110	3	MOL	3	FAS 101	1		
	MAT Core	3						
	Semester total	16		16		14		15
SPRING	PSY 115	3	RST Elective	3	PSY Elective	3	Electives	15
	MOL	3	SSC Core	3	PSY Research	4		
	HIS 120	3	LIT 250	3	Elective	3		
	LIT 120	3	PSY Electives	6	PHI/RST 305	3		
	PHI 105	3			FAS 20x	2		
		Semester total	15		15		15	
	Total Credits	31		31		29		30 121

Special Notes on Major Requirements:

1. Psychology research electives are designated in course descriptions as such. Remaining non-required psychology courses are psychology electives.
2. Senior psychology majors must take the ETS Area Exam in psychology, and must pass a comprehensive oral examination.
3. To major in psychology, a grade of C+ or higher must be earned in PSY 110 and a grade of C or higher must be earned in PSY 115.
4. Students may take a maximum of 6 credits of Directed Research (PSY 300); the course may be taken for 1, 2 or 3 credits per semester. A maximum of 3 credits may be used as the equivalent of a Psychology Elective (additional credits will count toward the total needed for graduation). For those students wishing to complete a Thesis (PSY 486), a minimum of 1 credit of PSY 300 is a prerequisite. PSY 486 may be counted as a Psychology Elective.
5. Students may take a maximum of 6 credits of Internship (PSY 374 and 474). A maximum of 3 credits may be used as the equivalent of a Psychology Elective (additional credits will count toward the total needed for graduation).
6. PSY 212 (Developmental Psychology) is designed for non-psychology majors, especially nursing majors. Psychology majors interested in developmental psychology should take courses within the developmental sequence (PSY 214, 216, 218). Students taking PSY 212 should not take PSY 214 (Child Psychology) and vice-versa.

Requirements for Minor

Psychology minors must complete PSY 110 General Psychology (3 credits), with a minimum grade of C+, plus five psychology electives (18 credits) approved by the department.

Core Fulfilling Courses

PSY 110 General Psychology

Serves as a social science core.

Course Descriptions

PSY 110 General Psychology (3 crs)

A survey of contemporary psychology, including the topics of conditioning and learning, sensation and perception, psychophysiology, motivation and emotion, memory and cognition, development, social behavior, psychological testing, personality, psychopathology and psychotherapy. Participation in research projects or an alternative exercise is required.

PSY 115 Statistics for the Behavioral Sciences (3 crs)

Students will learn to analyze and interpret data using descriptive and inferential statistics. Measures of central tendency, variability and hypothesis testing using parametric and non-parametric tests will be discussed. Prerequisite: PSY 110.

PSY 192 States of Consciousness (3 crs)

A seminar examining theoretical and empirical bases of human consciousness, noting physiological correlates. Topics include sleep, dreaming, hypnosis, meditation, biofeedback, sensory deprivation, drug-induced states and death, as well as the cultural shaping of ordinary consciousness. Prerequisite: PSY 110.

PSY 211 Experimental Psychology (4 crs)

An introduction to the principles and methods of experimental psychology, with laboratory investigation. Prerequisite: PSY 115.

PSY 212 Developmental Psychology (3 crs)

An analysis of development throughout the life-span, with a special emphasis on various theoretical approaches to development. Designed for non-psychology majors in the Pre-Physical Therapy concentration. Students taking this course should not take PSY 214, 216, or 218. Prerequisite: PSY 110.

PSY 214 Child Psychology (3 crs)

A study of the physiological, intellectual, social and emotional factors in child development. Students taking this course should not take PSY 212. Prerequisite: PSY 110.

PSY 216 Adolescent Psychology (3 crs)

A study of basic research and theories concerning development in the adolescent years. Students taking this course should not take PSY 212. Prerequisite: PSY 110.

PSY 218 Adulthood and Aging (3 crs)

A study of adulthood and aging from an interactionist perspective with an emphasis on the psychological development of the individual during the latter part of the life span. Students taking this course should not take PSY 212. Prerequisite: PSY 110.

PSY 220 Educational Psychology (3 crs)

A study of the cognitive and affective dimensions of student behavior, with emphasis on the theoretical conceptions of learning which underlie educational methods. Prerequisite: PSY 110.

PSY 222 Child Psychopathology (3 crs)

A study of the central issues in childhood psychopathology including theoretical and methodological issues, descriptions of disorders, clinical and research data and social, familial and ethical concerns.

We will emphasize the integration of the processes of normal development with the occurrence of problem behaviors and learn about the neurobiological, genetic, psychological, family, peer, cultural and gender influences on the cause and treatment of childhood disorders.

PSY 226 (MGT 226) Organizational Behavior (3crs)

A survey course that examines individual and group behavior in an organizational context. The underlying thesis of this course is that an increased understanding of the human system can result in an organization that is more effective at meeting both the organization's objectives and the goals and needs of the individual employees. Major topics include: motivation, leadership, decision-making and organizational change. Prerequisite: PSY 110.

PSY 235 (WST 235) (INS 235) Human Sexuality in a Diverse World (3 crs)

A databased study of biological, religious/historical, cultural and individual determinants of intimate human behavior. Prerequisite: PSY 110.

PSY 238 Psychopharmacology (3 crs)

Examination of how drugs affect our behaviors, thoughts and emotions. The course will address the impact of psychopharmacological use and abuse in society, how drugs can alter neuronal information processing, pharmacodynamics, analysis of pharmacological agents with particular attention given to the psychological effects of these drugs and the applicability of pharmacological agents to the treatment of psychopathologies. Prerequisite: PSY 110.

PSY 240 Social Psychology (3 crs)

A study of the effects of the group on individual behavior, including the topics of aggression, persuasion, attitudes, compliance, obedience, attraction, person perception and proxemics. Prerequisite: PSY 110.

PSY 245 Psychology of Religion (3 crs)

A study of the relationships and tensions between psychology and religion, focusing on faith, doubt, values, conversion and moral development. Prerequisite: PSY 110.

PSY 250 Sport Psychology (3 crs)

An examination of sports from an empirical point of view with emphasis on behavioral/learning principles as they apply to the influence of sports on athletes and spectators. Prerequisite: PSY 110.

PSY 300 Directed Research (1, 2, or 3 crs)

Under the direction of a faculty member, students design and carry out empirical research in psychology. Prerequisite: PSY 211 and permission of the instructor.

PSY 311 Physiological Psychology (4 crs)

A study of the physiological correlates of human behavior, especially the relationship between brain and behavior; Research Elective. Prerequisites: BIO 105 or BIO 120, PSY 211.

PSY 312 (MGT 312) Industrial Psychology (3 crs)

A survey of the field of Industrial/Organizational Psychology with particular emphasis on the classical Industrial Psychology domain of selection. The course, as in the case with the field of Industrial/Organizational Psychology, is somewhat quantitative. Prerequisite: PSY 110.

PSY 313 Motivation and Emotion (4 crs)

A study of motivational and emotional processes from physiological, individual and social standpoints; databased theories of motivation and emotion evaluated; Research Elective. Prerequisite: PSY 211.

PSY 315 Tests and Measurements (3 crs)

An analysis of psychological tests and measurements, including tests of intellectual level, specific aptitude and personality; test construction, reliability, validity, norming procedures and ethical issues emphasized. Prerequisite: PSY 110, PSY 115

PSY 317 Cognitive Psychology (4 crs)

An introduction to the higher mental processes from an experimental point of view, including the topics of memory and attention, thinking, creativity, language behavior and cognitive development; Research Elective. Prerequisite: PSY 211.

PSY 319 Sensation and Perception (4 crs)

A study of the reception and interpretation of sensory information, including study of how sensory receptors function and factors which affect perceptual organization; Research Elective. Prerequisite: PSY 211.

PSY 320 Learning (4 crs)

An introduction to the basic theoretical, experimental and applied concepts in learning, with particular emphasis on operant and classical conditioning. Research Elective. Prerequisite: PSY 211.

PSY 325 Environmental Psychology (3 crs)

A study of the relationship between the environment and behavior, including the topics of territoriality, wayfinding, environmental stressors, environmental stewardship and the optimal design of environments. Prerequisite: PSY 110

PSY 330 Personality (3 crs)

A survey of the various theories of personality, including psychoanalytic, behavioral, phenomenological and dispositional, and the study of various methods for assessing personality. Prerequisite: PSY 110.

PSY 335 Psychotherapy (3 crs)

A discussion of assessment techniques, empirically-based treatments, strategies for prevention of mental illness and ethical issues in therapy. Prerequisite: PSY 110.

PSY 340 Abnormal Psychology (3 crs)

A study of the major predisposing and precipitating factors in the development of abnormal behavior, with emphasis on the biological, social and cultural factors involved. Prerequisite: PSY 110.

PSY 350 Health Psychology (3 crs)

An investigation of factors that promote health, as well as those contributing to illness and behaviors related to illness. Research methods of gathering data within this developing field are stressed. Prerequisite: PSY 110.

PSY 374 Internship I (3 crs)

Students gain firsthand experience in the practice of psychology by working under supervision in various agencies in the Ohio Valley. Prerequisite: PSY 110, junior level status as a psychology major; permission of instructor.

PSY 410 Advanced Statistics and Data Management (1 cr)

Seminar course designed to introduce the student to advanced statistical analysis and data management techniques, which will be further emphasized in a graduate-level setting. The course begins with a brief review of basic statistics and SPSS computing procedures. Topics then include non-parametric statistical procedures, qualitative data analysis, partial correlation, analysis of covariance, multivariate analysis of variance, multivariate analysis of covariance, multiple linear regress, factor analysis, discriminate analysis, cluster analysis, path analysis, logit modeling and trend analysis. Data management issues concern determining the appropriate statistical analysis to use for a given data set, interpretation and evaluation of published research and discussion of issues related to missing, outlying and improperly coded data. Prerequisite: PSY 211 and permission of instructor.

PSY 420 History and Systems of Psychology (3 crs)

An overview of the roots of scientific psychology in philosophy and experimental physiology, and a detailed examination of the systems of structuralism, functionalism, behaviorism, Gestalt psychology and psychoanalysis. Prerequisite: PSY 110, junior level status.

PSY 425 (WST 425) (INS 425) Topics in Gender (3 crs)

An exploration of current research findings on the interaction of gender and society, how men and women behave differently and how gender is represented in culture. Prerequisite: PSY 110.

PSY 474 Internship II (3 crs)

A second internship, completed after taking PSY 374. May not be counted as one of the upper division electives required of psychology majors. Prerequisite: PSY 110, PSY 374, senior level status as a psychology major; permission of instructor.

PSY 486 Thesis (3 crs)

Completion of the senior thesis project. May require some work in the summer prior to senior year. Prerequisite: PSY 300, senior level status.

PSY 488 Senior Seminar (3 crs)

A capstone course in which majors review, consolidate and integrate material they have learned in other courses, as well as considering major ethical and social justice issues in the field. Prerequisite: PSY 211, senior level status.

Religious Studies

(See description of Religious Studies courses in the Theology and Religious Studies section, p. 100)

Respiratory Therapy

Contact Persons: Allen Marangoni, Ed.D., RRT, PT

Respiratory Therapy

Marybeth Emmerth, M.S., RRT, CPFT

Respiratory Therapy

The curriculum is designed to provide a thorough grounding in the basic sciences, underlying allied health technologies, clinical training emphasizing the application of fundamental principles and a liberal arts foundation which allows the student to explore the human and ethical aspects of health care practice. The Student Handbook outlines the specific requirements for successful completion of the bachelor of science degree. Course sequence may be slightly altered.

Requirements for Respiratory Therapist Bachelor of Science Degree

Upon completion of the Respiratory Therapy program, students will be able to demonstrate the ability to:

1. Comprehend, apply and evaluate information relevant to their role as a Respiratory Therapist (Cognitive).
2. Possess personal behaviors consistent with professional and employer expectations (Affective).
3. Be technically proficient in all the skills necessary to fulfill the role of a respiratory therapist (Psychomotor).

In addition to completing the core curriculum requirements, outlined on pp. 14-15 of this catalog, the respiratory therapy major must complete the following courses with a letter grade of "C" or better and must maintain a 2.3 GPA in all math and science courses to enter clinical practicum.

BIO 115, 121	General Biology I and Lab	(3 and 1 crs)
BIO 127, 128	Anatomy & Physiology I & Lab	(3 and 1 crs)
BIO 129	Anatomy & Physiology II	(3 crs)
BIO 242	Cardiopulmonary Physiology	(3 crs)
*CHE 105	Introductory General Chemistry	(3 crs)
*CLS/PHY 130	Physics for Allied Health	(3 crs)
CLS 215	Introduction to Epidemiology	(2 crs)
CLS 234	Pathophysiology	(3 crs)
CLS 311	Introduction to Pharmacology	(1 cr)
CLS 312	Emergency Life Support Techniques	(3 crs)
CLS 320	Management Techniques for the Health Sciences	(2 crs)
CLS 330	Principles of Instruction	(2 crs)
RET 212	Respiratory Therapy Equipment and Procedures (Lab and Lecture)	(3 crs)
RET 320	Respiratory Pharmacology	(1 cr)
RET 325	Adult Respiratory Therapy Equipment and Procedures	(3 crs)
RET 330	Pulmonary Functions and Arterial Blood Gases	(3 crs)
RET 340	Pulmonary Rehabilitation and Current Topics in Respiratory Care	(3 crs)
RET 345	Neonatal and Pediatric Respiratory Care	(3 crs)

(* or higher level course)

Clinical Practicum including:

RET 362	Clinical Orientation	(2 crs)
RET 363	Principles of General Care I	(3 crs)
RET 365	Introduction to Anesthesia	(1 cr)
RET 366	Principles of Critical Care I	(5 crs)
RET 464	Pulmonary Functions	(2 crs)
RET 465	Principles of General Care II	(4 crs)
RET 466	Principles of Critical Care II	(4 crs)
RET 467	Rehab. and Home Care	(2 crs)
RET 468	Clinics	(1 cr)
RET 469	Emergency Medicine	(1 cr)
NUR/RET 412	Critical Thinking Skills	(1 cr)
NUR/RET 430	EKG Interpretation	(1 cr)
NUR/RET 461	Advanced Cardiac Life Support	(1 cr)
RET 482	Special Project I	(1 cr)
RET 483	Special Project II	(1 cr)
RET 484	Special Project III	(1 cr)
Electives (Not Required)		
RET 420	Registry Review for Respiratory Therapy	(1 cr)
RET 480	Advanced Clinical	(1 to 2 crs)

Course Descriptions

RET 212 Respiratory Therapy Equipment and Procedures (3 crs, Lab and Lecture)

The operating principles, maintenance and application of nebulizers, regulators, oxygen analyzers, basic oxygen equipment, piping systems, various safety systems used in respiratory care and proper cleaning techniques. Includes basic pulmonary assessments, blood gas interpretations. Lecture and lab. Prerequisite: Acceptance into Respiratory Therapy Program.

RET 320 Respiratory Pharmacology (1 cr)

A study of the application, uses and effects of pharmacological agents administered by respiratory therapists, and those affecting the cardiovascular system. Prerequisite: CLS 311.

RET 325 Adult Respiratory Therapy Equipment and Procedures (3 crs)

The operating principles, maintenance and application of respirators and other advanced equipment and monitoring devices as they apply to the adult patient. Suctioning, airways, chest physical therapy and incentive spirometry, PEP Therapy and IPPB are also covered. Prerequisite: RET 212.

RESPIRATORY THERAPY - Recommended Course Sequence

	Freshman		Sophomore		Junior		Senior	
FALL	FYS 101	1	PHY 130	3	RET 325	3	RET 464	2
	BIO 115	3	PHI 205	3	CLS 234	3	RET 465	4
	BIO 121	1	BIO 129	3	CLS 311	1	RET 466	4
	HIS 110	3	PSY 110	3	RET 320	1	RET 468 & 469	2
	ENG 105/110	3	Global Persp.	3	CLS 312	3	RET 467	2
	MAT 105	3			RET 362	2	RET 483	1
	Semester total	14		15	CLS 330	2	NUR/RET 430	1
						15		16
SPRING	BIO 128	3	MED SPA	3	RET 330	3	RET 484	1
	BIO 127	1	RET 212	3	RET 340	3	LIT 250	3
	LIT 120	3	BIO 242	3	RET 345	3	RST/PHI 305	3
	PHI 105	3	CLS 215	2	RET 363	3	RET 420 & 480 Elective 2-3	
	HIS 120	3	CHE 105	3	CLS 320	2	NUR/RET 461	1
	RST 106/107	3	FAS 101	1	RST Elective	3	FAS 20x	2
	Semester total	16		15		17	NUR/RET 412	1
								14-15
SUMMER					RET 365	1		
					RET 366	5		
					RET 482	1		
	Semester total				7			
	Total Credits	30		30		39		30-31 129+

RET 330 Pulmonary Function and Blood Gases (3 crs)

Introduces the student to bronchoscopy and basic pulmonary function procedures and interpretation, operation of equipment and technology, blood gas analysis and its application to respiratory care. Prerequisites: RET 212, RET 325.

RET 340 Pulmonary Rehabilitation and Current Topics in Respiratory Care Techniques (3 crs)

Pulmonary rehabilitation, basic chest X-ray interpretation, non-invasive monitoring, smoking cessation and RT Math. Prerequisites: RET 212, RET 325.

RET 345 Neonatal and Pediatric Respiratory Care (3 crs)

Basic fetal development, neonatal and pediatric conditions, congenital heart defects and the use of advanced equipment in the care of disease states. Prerequisite: RET 212, RET 325.

RET 362 Clinical Orientation (2 crs)**(a clinical practicum)**

This course is designed to orient the student to the respiratory care environments. An introduction to basic procedures in the laboratory leading to basic administration of therapies in the general care areas of the hospital. Prerequisite: Junior status in good standing.

RET 363 Principles of General Care I (3 crs)**(a clinical practicum)**

The student will be exposed to principles of nursing, patient care and respiratory care in general surgical, medical, intensive care, pulmonary function and rehabilitation areas. Prerequisite: Junior status in good standing.

RET 365 Introduction to Anesthesia (1 cr)**(a clinical practicum)**

This course is designed to familiarize the student with surgical procedures, sterile technique, intubation, airway maintenance and principles of anesthesia. Prerequisite: Completion of pre-practicum courses.

RET 366 Principles of Critical Care I (5 crs)**(a clinical practicum)**

This course will familiarize the student with all aspects of ventilator management, airway maintenance and principles of respiratory management of the critically ill patient. Prerequisite: Completion of pre-practicum courses.

RET 412 Critical Thinking Skills (1 cr) (spring)

Critical thinking and problem solving skills are applied to patient situations involving complications. This course has one-half (1/2) credit of laboratory. Prerequisites: Same as 430.

RET 420 Registry Review for Respiratory Therapy (1 cr)

Designed to review necessary information for passing the state licensure examination for respiratory care. Prerequisite: Completion of the pre-practicum courses.

RET 430 Basic EKG (1 cr)

This course focuses on the identification of cardiac dysrhythmias, benign and lethal, including causes and symptoms accompanying each dysrhythmia. Through the use of practice telemetry strips, students will then apply interpretation skills in a clinical setting.

RET 464 Pulmonary Function (2 crs)**(a clinical practicum)**

The student will be instructed in the performance of pulmonary function tests, the drawing of arterial blood gases, analysis of samples, interpretation of results; and observation and assistance with fiberoptic bronchoscopes. Prerequisite: Completion of pre-practicum courses.

RET 465 Principles of General Care II (4 crs)**(a clinical practicum)**

This course is designed for the student to administer therapy in the general care area with clinical supervision. The student will apply and refine skills presented in RET 363, Principles of General Care I, and become skilled in 12 lead EKG and chest physical therapy and monitoring techniques. Prerequisite: Completion of pre-practicum courses.

RET 466 Principles of Critical Care II (4 crs)**(a clinical practicum)**

This course will give the student more direct responsibility for the patient-ventilator system in the adult and pediatric intensive care areas. The student will apply and refine skills presented in RET 366, Principles of Critical Care I, and spend 1 week with pulmonary physician as well as the integration of didactic and clinical investigation of case studies. Prerequisite: Completion of pre-practicum courses.

RET 467 Rehabilitation and Home Care (2 crs)**(a clinical practicum)**

This course places the student in hospital rehabilitation centers and home health care services. The student will be exposed to principles of outpatient management and rehabilitative medicine. Prerequisite: Completion of pre-practicum courses.

RET 468 Clinics (1 cr) (a clinical practicum)

The student will be placed in various clinics to observe the screening, diagnostic process and management of patients. Exposure to specific disease management, X-ray evaluation, angiography and heart lung bypass techniques are included. Prerequisite: Completion of pre-practicum courses.

RET 469 Emergency Medicine (1 cr) (a clinical practicum)

Placement in the emergency room, intensive care settings and on the cardiac arrest team for an orientation to triage and emergency intervention. Prerequisite: Completion of pre-practicum courses.

RET 480 Advanced Clinical Experience (1-2 crs)

Elective course in a specialized clinical area, directed by a therapist or physician and resulting in a summary paper. (Cooperative)

RET 482 Special Project (1 cr) (summer)

Preparation for a research project, including the design, organization and statistics used. A proposal for IRB review is required.

RET 483 Special Project (1 cr) (fall)

Continuation of research project with any modification and the start of data collection.

RET 484 Special Project (1 cr) (Spring)

Completion of research project with data analysis and an oral and written presentation of the research project.