

# Philosophy

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In the broadest sense of the word, philosophy is simply the human attempt to understand one's life and place within the cosmos. Key to this enterprise is gaining deeper insight into the cumulative intellectual history of humanity. To philosophize means to clarify one's experience through reflection and then to act with resolution. In order to grow in human stature, one must become thoughtful, and must possess a more than everyday understanding of one's world, a more than mechanical image of oneself, and a more than routine familiarity with the moral realm.

Considered from this point of view, philosophy is both easy and difficult; easy, as at the outset it only asks that we think; difficult, as sustained, efficacious thinking demands courage, patience, and an almost unlimited degree of openness.

In preparing its majors to receive the Bachelor of Arts Degree, the Department of Philosophy focuses principally on the needs of those who will be pursuing further graduate studies in philosophy and then ultimately a profession in our cognate field. Students who earn degrees from our department acquire a strong historical, thematic and methodological foundation in philosophy, a preparation which equips them with the skills to excel. However, our horizon is expansive—it further embraces those who seek what the American Philosophical Association calls "a valuable and indeed paradigmatic 'liberal education' major." Our students develop not only sound historical knowledge of the field but are challenged to critically engage their world with solid analytic abilities and imaginative, synthetic solutions to problems which present themselves. They will be prepared to offer both abstract analyses as well as concrete proposals. Our students are well equipped to go into life as independent learners, as contributors to a wide variety of fields, and to commence graduate studies in the humanities, social sciences and the law.

While we provide our majors with a rigorous and stimulating undergraduate experience, this is but part of our task. Philosophy plays an integral role in the education of all undergraduates at a Benedictine college. We gladly work with each student in their core courses in philosophy to develop deeper insights into their personal lives and the cumulative history of humankind. When these initial encounters spur further interest, we invite students to join us in either the major or minor degree program.

## Philosophy Learning Objectives

The Philosophy Department helps its majors and minors achieve the following goals:

- Develop a sophisticated understanding of philosophical thought in its historical context, exploring important philosophical systems charitably and accurately;
- Foster habits of logical thinking and critical analysis to analyze arguments, evaluate positions, and use reason in everyday life;
- Understand basic and advanced ethical theories and apply their principles to concrete problems in individual and social life;
- Synthesize related philosophical ideas from different sources, and engage them with students' own experience; and
- Skillfully articulate conceptual elements of philosophical thought in written and oral form, and develop high-level skills of independent scholarship.

## Requirements for a Bachelor of Arts Degree in Philosophy

(See Core Curriculum requirements.)

### Requirements for the Major: (33 credits)

33 credits in Philosophy, structured in the following way\* (These are in addition to the Core requirement of 1st Philosophy PL 101):

PL 100	Ancient and Medieval Philosophy	3
PL 120	Logic	3
PL 200	Modern Philosophy	3
PL 205	Contemporary Philosophy	3
PL 215	Ethics	3
PL 450	Senior Thesis	3

\*Those applying for graduate studies in philosophy are also required to complete *Symbolic Logic*, PL 250. All other majors are strongly encouraged to complete this course.

In addition to the 18 credits in these six courses, 15 credits of work in five further courses, chosen in consultation with the student's advisor from the course offerings of the Philosophy Department.

Typically, this would include PL 220 Theories of Knowledge, and PL 230 Metaphysics. Students would also generally choose at least two courses from the following: PL 210 Philosophical Anthropology, PL 280 Thomistic Philosophy, PL 235 Philosophy of God, PL 245 Philosophy of Science. Students wishing to extend their study of ethics are encouraged to enroll in PL 216 Ethical Problems, PL 217 Environmental Ethics, or PL 218 Bioethics.

### Semester Review

Having chosen philosophy as a major, each student will meet with his or her advisor to review the work of the previous semester. This is generally done each January for the previous fall semester, and in September for the previous spring semester.

As a part of this review, the student will evaluate his or her own performance in a guided, written statement. This statement functions primarily as a résumé of work in the major, but extra-departmental work may also be assessed. During the review, the student presents two pieces of written work from the previous semester, at least one of which will be from a philosophy course (provided that the student had taken a course in the field the previous semester).

### Senior Thesis

Each major is required to complete a Senior Thesis. During the third semester before graduation each student works with his or her faculty advisor to form a Senior Thesis Committee and choose a topic for the thesis. The student, with the guidance of the Thesis Committee, 1) plans the project and 2) carries out the basic research. During the second semester before graduation the student enrolls in PL 450 Senior Thesis and the bulk of the writing occurs, with a complete intermediate (non-rough) draft presented to the Committee for comments. During the student's final semester any remaining work is completed, with the final draft completed by the ninth week of the semester in which the student expects to graduate. The finished Senior Thesis is evaluated by the Thesis Committee, which includes the Chair of the Department. By the last week of classes before graduation, each student will give an oral presentation of the project to departmental faculty and students, responding to questions and comments. Assessed as a whole, acceptable work is deemed to have "passed," "passed with distinction," or "passed with highest distinction."

### Electives:

An appropriate choice of electives in fields outside of philosophy can add considerable focus to the study of philosophy. For this reason the Department requires the choice of electives to be done in close consultation with the student's advisor. Language studies and accompanying foreign study are especially encouraged.

### Requirements for the Minor:

18 credits, structured in the following way (These are in addition to the core requirement of 1st Philosophy PL 101):

PL 100	Ancient and Medieval Philosophy	3
PL 200	Modern Philosophy	3
or		
PL 205	Contemporary Philosophy	3
PL 215, 216, 217, or 218	(in Ethics curriculum)	3

Plus nine additional credits chosen in consultation with the student's advisor from the regular course offerings of the Philosophy Department.

### Suggested Minor in Philosophy for Students Majoring in the Department of Theology

Philosophy and Theology have for many centuries been friendly collaborators in the search for meaning and truth. As such, many students majoring in one of these fields have fruitfully studied in the other as well. Students in the Department of Theology have frequently found a minor in Philosophy to be of great support to their present and future work in their chosen field. Below is a suggested pattern of courses designed to be helpful to those students. The specific selection of courses is worked out in consultation with the student's advisor:

PL 100	Ancient and Medieval Philosophy	3
PL 200	Modern Philosophy	3
or		
PL 205	Contemporary Philosophy	3
PL 215, 216, 217, or 218	(One of the courses in our Ethics curriculum)	
PL 235	Philosophy of God	3
or		
PL 280	Thomistic Philosophy	3
2 courses chosen from the following:		
PL 230	Metaphysics	3
PL 220	Theories of Knowledge	3
PL 210	Philosophical Anthropology	3

### Typical First-Year Schedule:

	Fall	Spring
PL 101 1st Philosophy	3	
PL 120 Logic		3
Foreign Language (intermediate or advanced)	3	3
EL 102/TH 119	3	3
History/Social Sciences	3	3
Social Sciences/Religious Studies/English	3	
Mathematics/Fine Arts		3

All students will take one course designed as a First-Year Seminar which will satisfy a Core Curriculum requirement. PL 101 1st Philosophy as a required course for the Core Curriculum and is additionally a prerequisite for any Philosophy course other than PL 120 Logic.

## Course Descriptions

### PL 100 Ancient and Medieval Philosophy

Plato and Aristotle have exercised such unequalled influence on the course of Western ideas that the whole subsequent history of philosophy could be considered an extended footnote to their writings. This course, using the thought of Plato and Aristotle as a nucleus, explores the great metaphysical themes of the "One and the Many" as they unfold in both knowledge and the real. It treats of the problems of participation and analogy. The contributions of Plotinus, Augustine, and Aquinas, to the development of these themes are explored. Some considerations, though necessarily less, are given to what these thinkers maintained to be the purpose of human life and the means of achieving it. Three credits.

### PL 101 1st Philosophy

This course is intended to introduce philosophy to students unfamiliar with the field. Its intent is to provide a coherent sense of the important issues and approaches embraced by philosophy and to do so by setting these in a vital, historical context. Important ideas from the ancient, medieval, modern and contemporary periods will be explored both in their abstract setting as well as in terms of the ways in which they have affected the development of our cultural, scientific and spiritual lives. Three credits.

### PL 120 Logic

This introductory course seeks to formalize the everyday use of logic to distinguish correct and incorrect forms of reasoning. After setting general terms for argument analysis, the distinguishing features of deductive and inductive arguments are noted. Language as the vehicle of logic is considered, including the purposes and types of definition and recognition of common informal fallacies. The balance of the course is devoted to deduction, with special consideration given to Venn diagrams as a mechanical test of the validity of categorical syllogisms. Three credits.

### PL 200 Modern Philosophy

This is the period of intellectual history, stretching roughly from the late Renaissance to the latter half of the nineteenth century, that witnessed the birth and development of modern science. The outstanding feature of this history is its persistent preoccupation with the epistemological problems of certitude, verifiability, methods and limits of reliable knowledge. Using these themes as the organizing principles of the course, the views of such thinkers as the following will be considered: F. Bacon, Descartes, Spinoza, Leibniz, Locke, Berkeley, Hume, and Kant. Three credits.

### PL 205 Contemporary Philosophy

This course examines the philosophical thought of the 19th and 20th centuries. It takes as its starting point the rebellion against the Kantian world view, and focuses on the increasingly important roles played by history and human individuality in philosophical reflection. In pursuing this theme the approaches of positivism, existential phenomenology, and the Anglo-American analytic movement will be examined. The course considers, among others, such thinkers as Hegel, Marx, Nietzsche, Russell, and Heidegger. Three credits.

### PL 210 Philosophical Anthropology

The attention of this course is directed at the question: What does it mean to be a human being? The course will systematically examine some of the leading views of human existence set forth over the last 24 centuries. The guiding perspective for the investigation will come from contemporary suggestions. Thinkers of this century have urged that we must pay close attention to the fact that while humans do have the capacity to act independently of the constraints of instinctual and biologically determined behavior, we are embodied, and thus must acknowledge the historical, linguistic, and cultural elements of our being. Within this context, the course will reflect on the objective, subjective, or ultimately fluid character of human nature. It will examine the variously suggested rational, passionate, playful, moral, religious, or gender based character of humanity. This course provides serious and advanced study in the discipline; majors, minors, or instructor permission. Three credits.

### PL 215 Ethics

Ethics is practical philosophy indicating, in general, what humans ought to do in the light of appropriate rules of conduct and suitable ends. Some fundamental views of right and good are considered in their classical formulations by such thinkers as Plato, Aristotle, Aquinas, Hume, Kant, and Mill. Problems and examples are used to illustrate these views and to provoke judgments regarding concrete issues. Three credits.

**PL 216 Ethical Problems**

This course will consider opposing viewpoints on contemporary issues such as abortion, racism, sexual morality, the environment, capital punishment, hunger, legislation, and public policy. Students will also be asked to review concepts such as subjectivism, psychological and ethical egoism, the relationship between morality and religion, and the possibility of objectivity in ethics. Three credits.

**PL 217 Environmental Ethics**

This course investigates the different ways that human beings think of the environment and the influence that these various conceptions have upon defining what, if any, responsibility human beings have to the natural world. Special attention will be given to the source and meaning of the term 'value' as well as to the specifications that are used to assign or distribute this term. The principal environmental theories that indicate the origin and range of value that will be examined include: anthropocentrism, individualism, holism, biocentrism, ecocentrism, speciesism and ecofeminism. Some practical concerns that will be examined in order to consider the implications of the various value theories are urban growth, poverty, use of natural resources, energy production, food production and distribution, pollution and population control. Three credits.

**PL 218 Bioethics**

This course will examine the ethical issues surrounding such post-modern technologies as genetic manipulation, human and animal cloning, and the "creation" of transgenic organisms as well as the moral dilemmas that result from gene therapy, contraception, stem cell and fetal tissue research, and the use of animals and humans as test subjects. Three credits.

**PL 220 Theories of Knowledge**

This course explores, both topically and historically, the various avenues which philosophical thought has followed in its attempts to understand how humans gain knowledge of themselves and the world in which they are situated. Representative views of classical thought, Continental rationalism, British empiricism, transcendental idealism, 20th-century realism, and phenomenology will be examined. In each case, the structure of consciousness and the relation of consciousness to objects known will be explored. Flowing from this will be a consideration of their respective accounts of perception, conception, memory, judgment, and truth. Throughout the course, each of the views will be critically evaluated as to its adequacy of the human experience. This course provides serious and advanced study in the discipline. Three credits.

**PL 227 Philos & Eros**

In this course participants will seek to explore the puzzling relationship between Eros and philia. We will lay down a foundation by seeking traditional philosophical answers as to how to embrace the paradoxical aspects of love, looking for advice from such diverse thinkers as Plato, Augustine, Rousseau, Hegel, Nietzsche, and Freud. After establishing this footing we will extend our investigation by listening to the counsel of psychologists, psychoanalysts, artists and poets. Finally, we will look to contemporary contributions made by those employing the tools of feminism and poststructural analysis. Interspersed throughout the course we will concretize our theoretical reflections with examinations of specific issues such as the dialectic between the erotic and the pornographic and the multivalenced direction of sexuality. Prerequisite: Two previous courses in philosophy. Three credits.

**PL 230 Metaphysics**

This course is designed to introduce the student to some of the basic metaphysical themes. It will be concerned with various

areas of theoretical philosophy, considering questions regarding: the nature of the world, knowledge and truth, freedom, the mind-body view of man, and various conceptions of God. The approach of the course will be problem-oriented, and the medium will be the views of various major thinkers in Western Philosophy. This course provides serious and advanced study in the discipline. Three credits.

**PL 232 Aesthetics**

In this course students will consider major theories in the philosophy of art, working to gain a pluralistic understanding of aesthetics. These concepts, from classical, contemporary and post-modern sources, will be applied to works of art from a variety of media. Three credits.

**PL 235 Philosophy of God**

This course discusses the term "god" as used among different peoples and cultures, with special emphasis, of course, on the Judeo-Christian understanding of it. Distinct from sacred theology, it examines by the light of reason the proofs for the existence of God and related questions. The course also considers modern problems about theism and atheism. Three credits.

**PL 240 The Influence of Philosophy on Theology, Then and Now**

The course traces some of the effects which Platonic, Aristotelian, and Stoic philosophies have had on such theological questions as the nature of (the Christian) God, God's relationship to the world, the understanding of the human person, as well as some ethical doctrines which permeate Western thinking. Some solutions are suggested. Three credits.

**PL 245 Philosophy of Science**

This course is designed to address the general question of what it means to take up the world in a "scientific" way. It traces the historical genesis of this special way of knowing, examining how scientific thought came to set itself apart from "non-scientific" engagement with the world. Of particular concern is the division of science, begun in the 19th century, into three branches: the natural, social, and human sciences. The justifications for this division are examined, giving careful attention to their divergence as well as to the question of an underlying commonality. Reflection on the ongoing ramifications of this rift for contemporary life brings the course to its close. Readings will be drawn from across the history of the philosophy of science, including such thinkers as Aristotle, Galileo, Bacon, Comte, Mill, Dilthey, Mach, Carnap, Popper, and Kuhn. Two previous courses in philosophy recommended. Three credits.

**PL 250 Symbolic Logic**

The course begins with basic propositional logic using truth table tests for arguments, then moves to the validation of arguments with the aid of simplification and inference rules. Attention is then directed to propositional proofs, including indirect and conditional proofs. Basic quantification logic follows, beginning with quantificational formulas, translations, proofs, and refutations. The next step is quantificational logic employing identity and relational translations, and arguments. As time permits, a study of modal logic will follow. Two previous courses in philosophy recommended. Three credits.

**PL 270 Political Philosophy**

A survey of the history of reflection on fundamental political goods by both classical and modern writers. Readings will normally include, but not be limited to, material from a subset of these philosophers: Plato, Aristotle, St. Thomas Aquinas, Machiavelli, Hobbes, Locke, Rousseau, and Marx. Common themes may include the nature of law, justice and rights, the social contract,

purposes and justifiability of economic institutions, cultural influences on the identification and attainment of social values, the possibility of political objectivity or neutrality, and the like. Three credits.

### **PL 280 Thomistic Philosophy**

The works of Thomas Aquinas are generally regarded as the high-water marks of Medieval Scholasticism, and they continue to have far-reaching effects on both philosophy and theology. In this course the students will read selections from some of Aquinas' major works organized, in general, along the lines developed in the *Summa Theologiae*. Some of the topics to be considered from a philosophical perspective are the following: philosophy and theology; the existence of God, the attributes, names, and powers of God; predestination; the human end, human acts, habits, virtues and vices; law in general and the various kinds of law. Three credits.

### **PL 303 Eastern Thought**

This course is designed to provide an overview of the basic teachings and historical development of major streams of Eastern thought including Confucianism, Daoism and Buddhism. Emphasis will be placed on a comparative approach, noting the complex historical and conceptual relationships to be found between and within the systems. The course will also examine the congruencies (as well as the disparities) of these approaches with important developments in Western thought. Three credits.

### **PL 305 Special Topics in Philosophy**

These courses provide an opportunity for faculty and students to work together in advanced study in areas of particular expertise and interest. Accordingly, the specific topic of these courses will vary from semester to semester. For the current topic, students should consult with the department or Office of the Registrar. Prerequisite: two courses in philosophy or the permission of the instructor. Three credits.

### **PL 350 Independent Study**

Independent study is primarily intended for the student who has advanced past a basic understanding of the field. It provides an opportunity to explore in greater depth and sophistication a specific philosophical topic or question of the student's choice. Selection of the topic of study is initiated by the student, while the structuring of the course is done in consultation with the instructor. Variable credit.

### **PL 450 Senior Thesis**

In this independent study course the student works closely with a faculty advisor to fully develop the capstone project in philosophy, the Senior Thesis. This process prepares the student for work beyond the undergraduate, developing the skills of independent scholarship: informed philosophical research, skillful analysis, thoughtful synthesis and fluent written work. PL 450 is taken in the second semester before graduation. Three credits.

### **PL 550 Cooperative Education — Philosophy Internship**

Work experience program extending the learning experience beyond the college into the world of work. Students are employed in an area related to their academic endeavor. Academic credits are awarded according to the extent of the work experience. Students may or may not be paid depending on the site. The purpose of the program is to integrate academic studies and employment activities. May be repeated. Variable credit.

# Physics

*Mohamed Anis Maize, Chairperson*

*Daniel Vanden Berk; Paul Follansbee; David W. Grumbine, Jr.;*

*John J. Smetanka*

*Adjunct Faculty: Diane Turnshek*

*Professor Emeriti: Michael K. Gainer and Jaroslav Slezak*

The overall mission of the Physics Department works in concert with the mission of the College and begins with the cultivation of a love for learning and an appreciation of the inherent beauty in the study of the natural world. The department serves three populations of students each with specific goals; (1) Physics and Physics Education majors, (2) majors in the departments of Biology, Chemistry, Mathematics, and Computer and Information Science, as well as students in the 3-2 Engineering program, and (3) non-science majors. The Department's mission is to prepare Physics and Physics Education majors by developing skills in experimental, theoretical and computational physics so our students are prepared to enter graduate programs in Physics and related fields (for example, Astrophysics, Material Science, and Engineering), obtain a professional and/or technical position in industry, or teach at the high school level.

For students majoring in other departments within the Herbert W. Boyer School of Natural Science, Mathematics, and Computing, the Department's mission is to develop the ability to apply the experimental, theoretical and computational principles of Physics to their specific disciplines. The Department's mission is to fulfill the goals of the core curriculum for students who are non-science majors by promoting scientific literacy, developing a familiarity with the scientific method and creating an awareness of the impact of science on society. For all students, the Department's mission is to stress the conceptual understanding of Physics through discussion, demonstration and experimentation and to develop the ability of the students to effectively communicate their understanding to others.

Two alternative programs are available. The program leading to a B.S. degree in Physics is for students who wish to continue their education in graduate school or to directly pursue careers in the private sector. The Physics Education program certifies students for careers as secondary school physics teachers. Students must contact the Education Department Chairperson for admission to the certification program.

### **Physics/Physics Education Learning Objectives**

- Knowledge of the fundamental theoretical fields of physics.
- Understanding and practice of experimental nature of physical science.
- Capability to perform independent research.
- Entrance to and performance in graduate and professional schools
- Successful education certification and procurement of positions in secondary schools
- Other Science Majors: Knowledge and understanding of a broad variety of fundamental physics topics.
- Other Science Majors: Understanding and practice of experimental nature of physical science in fundamental areas corresponding to broad survey of topics.
- Non-Science Majors: Satisfy Tier 1 and 2 core requirements and provide conceptual and knowledge and experimental practice specific to the individual courses.