

# Illinois State University Graduate Catalog

## 2007-08

Effective May 21, 2007

Visit our Illinois State University Web site at [www.IllinoisState.edu](http://www.IllinoisState.edu).

### Campus Contacts

Disability Concerns	ableisu@ilstu.edu	www.disabilityconcerns.ilstu.edu	309-438-5853
Financial Aid	askfao@ilstu.edu	www.financialaid.ilstu.edu	309-438-2231
Graduate Admissions	admissions@ilstu.edu	www.illinoisstate.edu/welcome2isu	309-438-2196
			800-366-2478
Graduate School	gradinfo@ilstu.edu	www.grad.ilstu.edu	309-438-2587
International Admissions	admissions@ilstu.edu	www.illinoisstate.edu/welcome2isu	309-438-8087
University Housing Services		www.uhs.ilstu.edu	309-438-8611
University Operator			309-438-2111
Veterans Services		www.arr.ilstu.edu/Registrar	309-438-2207

To request Graduate Catalog,\* Application for Admission,\* Class Registration Directory,\* status of admission application, campus visit, or general information . . . . . 800-366-2478  
\*Available online.

The general policies, regulations, calendar, fees, and courses contained in this catalog are subject to change without notice at the discretion of Illinois State University.

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*Illinois State University formally reiterates and reaffirms its commitment to the principles of equal opportunity, affirmative action, and diversity. Discrimination based upon race, color, religion, sex, national origin, age, disability, or veteran status is a violation of federal and state law and ISU policy and will not be tolerated. Discrimination based upon sexual orientation is a violation of state law and ISU policy and will not be tolerated. This nondiscrimination policy applies to all programs administered by the University. However, this policy should not be construed to infringe upon the free exchange of ideas essential to the academic environment.*

*To the extent allowed by law, all employment decisions, including those affecting hiring, promotion, demotion, or transfer; recruitment; advertisement of vacancies; layoff and termination; compensation and benefits; or selection for training will be made consistent with established ISU policy.*

*Responsibility for communicating, interpreting, and monitoring the University's equal opportunity policy has been assigned to the Office for Diversity and Affirmative Action (ODAA).*

*The Illinois State University Office for Diversity and Affirmative Action (ODAA) is committed to promoting a working and learning environment free of discrimination on the basis of race, color, national origin, religion, gender, sexual orientation, age, disability, or veteran status. To this end, the ODAA is responsible for ensuring the University's compliance with all applicable federal and state nondiscrimination requirements and serves as the institution's official liaison with governmental civil rights enforcement agencies. The Director reports directly to the University President and is responsible for the development and execution of the University's Affirmative Action Program and Plan. In addition, the Office provides leadership and support toward developing a comprehensive and institution-wide approach to achieving and sustaining a diverse and pluralistic community of students, faculty, and staff.*

*The ODAA is located on campus in 208A Hovey Hall. For additional information concerning the University's equal opportunity policy, please call (309) 438-3383.*

*Illinois State University assigns a high priority to the implementation of its equal opportunity policy and to maintaining an inclusive environment. The realization of this priority requires the cooperation of all members of the University community.*

**350 TOPICS IN THE HISTORY OF PHILOSOPHY**  
3 sem. hrs.

Intensive examination of an important figure, movement, or theme in the history of philosophy, e.g., Plato, British Empiricism, freewill/determinism. Prerequisite: May be repeated if content different.

**363 TOPICS IN METAPHYSICS AND EPISTEMOLOGY**  
3 sem. hrs.

Detailed examination of selected issues in contemporary metaphysics and epistemology. Prerequisites: PHI 281 and 112 or MAT/PHI 210. May be repeated if content different.

**390 INDEPENDENT STUDY**  
1-3 sem. hrs.

Prerequisites: One PHI course and consent of instructor and dept. chairperson.

## PHYSICS (PHY)

311 Moulton Hall, (309) 438-8756  
www.phy.ilstu.edu

**Chairperson:** Richard Martin. Office: 311 Moulton Hall.

**Graduate Faculty:** B. Clark, R. Grobe, S. Hassani, D. Holland, K. Karim, R. Martin, H. Matsuoka, S. Ren, E. Rosa, G. Rutherford, Q. Su.

**Note:** Graduate degrees are not granted in the Department of Physics, but course work is available as supplemental study or as electives.

### Courses

**310 READINGS FOR TEACHING HIGH SCHOOL PHYSICS**  
3 sem. hrs.

Essential background readings for teaching high school physics that center around developing scientific literacy in students. Prerequisites: 10 hrs. in Physics.

**311 TEACHING HIGH SCHOOL PHYSICS**  
3 sem. hrs.

Strategies, curricula, and resources for the teaching of high school physics. Application of knowledge of physics, adolescent psychology, and pedagogical theory to secondary teaching. Prerequisites: PHY 310; 18 hrs. in PHY; C or better in C&I 216, or concurrent registration. Clinical Experience: 10 hrs., Type 1-6. Not for credit if had PHY 301.

**312 PHYSICS TEACHING FROM THE HISTORICAL PERSPECTIVE**  
3 sem. hrs.

Qualitative overview of the development of classical scientific thought relating to physical phenomena. Prerequisite: 20 hours in PHY; admission to Teacher Education.

**318 METHODS OF COMPUTATIONAL SCIENCE**  
3 sem. hrs.

Introduction to a wide variety of computational techniques and their application to problems in chemistry and physics. Prerequisites: ITK 165, CHE 140, PHY 109 or 111, CHE360 or PHY 220/concurrent registration; or consent of instructor. Also offered as CHE 318.

**320 MECHANICS II**  
3 sem. hrs.

Coordinate transformations, nonlinear oscillations, Lagrangian and Hamiltonian mechanics, rigid body motion relativity. Prerequisites: PHY 220 and MAT 340.

**355 SOLID STATE PHYSICS**  
3 sem. hrs.

Crystal structures, X-ray and electron diffraction, lattice vibrations and thermal properties, binding energy, conduction of electrons, band theory, dielectric and magnetic properties, defects, metals, semiconductors, and insulators. Prerequisite: PHY 325.

**375 ELECTRONICS FOR SCIENTISTS**  
3 sem. hrs.

DC and AC circuit analysis with an introduction to the electrical properties of semiconductors; theoretical and experimental analysis of semiconductor diode, transistor, and operational amplifier circuits. Lecture and lab. Prerequisite: PHY 109 or 111.

**384 QUANTUM MECHANICS II**  
3 sem. hrs.

Operator formalism, Dirac bra and ket notation, angular momentum, perturbation theory, applications to laser physics. Prerequisites: PHY 284 and MAT 340.

**387 METHODS OF MATHEMATICAL PHYSICS**  
3 sem. hrs.

Finite- and infinite-dimensional vector spaces, matrices and determinants, Fourier analysis, complex analysis, differential equations, emphasis on physical applications. Prerequisites: PHY 240 and MAT 340 or concurrent registration.

**388 ADVANCED COMPUTATIONAL PHYSICS**  
3 sem. hrs.

Application of computational methods to contemporary topics in physics, including nonlinear classical and quantum dynamics or physical problems that involve many degrees of freedom. Prerequisites: PHY 220, 240, 284, and 318, or consent of instructor.

**400 INDEPENDENT STUDY**  
1-4 sem. hrs.

Prerequisite: Consent of instructor.

**411 TEACHING SECONDARY SCIENCE**  
3 sem. hrs.

Intensive study of findings from key areas of science education research with applications to teaching of biology, chemistry, and physics. Prerequisite: Admission to Post-Baccalaureate Graduate Certificate for Alternative Route to Secondary Teacher Certification.

**413 TEACHING HIGH SCHOOL PHYSICS II**  
3 sem. hrs.

Employs goal setting, self-assessment, and instructional design as a way of improving the physics teacher's inquiry practice. Prerequisite: Open only to certified, inservice high school teachers of physics and/or physical science with a minimum of two years teaching experience.

**498 PROFESSIONAL PRACTICE****1 sem. hr.**

Supervised work experience within undergraduate Physics Teacher Education program. Prerequisites: Admission by permission only; intermediate-level physics background consisting of classical mechanics, electricity and magnetism or introductory quantum mechanics, or equivalent; must be enrolled in C&I master's program. May be repeated during different semesters for a total of 3 sem. hrs.

## **POLITICS AND GOVERNMENT (POL)**

**401 Schroeder Hall, (309) 438-8638**  
**www.politicsandgovernment.ilstu.edu**

**Chairperson:** Jamal Nassar. Office: Schroeder 401.  
**Graduate Program Director:** Carlos Parodi.  
**Graduate Faculty:** R. Bradley, M. Cox, L. Crothers, G. Kiser, G. Klass, N. Lind, J. Nassar, C. Parodi, R. Payne, A. Riaz, K. Shapiro, B. Tamas, T. Wang, J. Webber, D. Weiden.

### **Master's Degree in Political Science**

The Department offers work leading to the following degrees: Master of Science (M.S.) or Master of Arts (M.A.). Master's degree students choose one of three options: (1) 32 hours with thesis, (2) 32 hours with comprehensive examinations, or (3) 39 hour option requiring POL 495 as a capstone experience; the 39 hour option is open only to students in the Applied Community Development Sequence. All degree students are required to take 15 credit hours in department 400-level seminars, including POL 497 or POL 461. Students may meet this seminar requirement only by taking fifteen credits of the following courses: POL 411, 417, 421, 422, 431, 432, 441, 442, 451, 452, 461, 470, 472, 477, 478, and 497. Exceptions to this policy may be granted with the consent of the Graduate Director and the Department Chair if the following requirements are met: (1) the student is taking an independent study or readings course in the summer; and (2) the instructor certifies in writing that the material covered in the summer course adequately substitutes for the material covered in a regular seminar. Only one such readings or independent study course can be substituted for a seminar course in a student's plan of study. The following three sequences are offered:

- Applied Community Development
- Public Service
- Global Politics and Cultures

#### **Applied Community Development**

This sequence is designed for returned Peace Corps volunteers, students with experiences similar to Peace Corps, and students preparing to enter Peace Corps. Students wishing to complete this sequence should apply and be approved by the Graduate Program Director before beginning course work. Students must complete the following courses: POL/SOA 470, POL/SOA 477, ECO/POL/SOA 478, POL 497 or, in some cases, POL 461, and 498.12 (2 hours). Students must fulfill the usual requirements for the degree, including thesis or completion of the 39 hour option with POL 495 as the capstone experience. Students in this sequence *may not* take comprehensive examinations to complete the degree.

#### **Public Service**

This sequence is designed for students interested in employment in the public sector, particularly at the state and local level. Students must complete POL 421 and 431, plus 12 hours selected from among the following courses: POL 313, 318, 323, 329, 330, 331, 332, 333, 334, 335, 411, 412, 422, 432, 433, and 498. Students must fulfill the usual requirements for the degree, including thesis or taking of a comprehensive examination.

#### **Global Politics and Cultures**

This sequence is designed for students interested in the increasingly inter-connected politics of the modern world. Students must complete POL 417, either POL 461 or POL 497, POL 451 and POL 441. They must take a range of courses across the sub-disciplines of political science. Students must also complete the regular requirements for a degree, including either the thesis or comprehensive exam option.

#### **Admission Requirements**

To be admitted to the master's degree program in Political Science, an applicant should have a 3.0 grade point average in the last 60 hours of undergraduate work and also have completed at least 15 hours of undergraduate course work in Political Science with a 3.0 average. Applicants with less than 15 hours of Political Science courses may be required to take additional courses after admission to the Department. The Department requires submission of GRE (General Test) scores. Students must submit three letters of recommendation and a written personal statement directly to the Department Graduate Director. The personal statement, preferably typed, should address reasons for seeking admission to the Political Science graduate program at Illinois State. Students are also encouraged to submit an example of their written academic work.

#### **Admission Deadline**

The deadlines for application to the master's program of the Department of Politics and Government are the following:

- For Fall semester: March 15th
- For Spring semester: October 15th

The graduate committee may in exceptional cases review applications received after each of these dates.

#### **Courses**

##### **301 TEACHING CITIZENSHIP AND GOVERNANCE** **3 sem. hrs.**

Examines knowledge and techniques for instructing civics and governance material, and analyzes the relationship between civic education and democracy. Prerequisites: POL 101, 105, or 106, or consent of instructor.

##### **310 VOTING AND ELECTIONS** **3 sem. hrs.**

Intensive investigation of U.S. voting behavior and electoral process; includes instruction in analytical techniques. Prerequisites: POL 105 or 106 or 138 or consent of instructor.

##### **312 PUBLIC OPINION** **3 sem. hr**

Includes attention to social and psychological bases of public opinion, current trends, methods of measurement, and opinion-policy linkages. Prerequisite: POL 105 or 106 or 138 or consent of instructor.