

INFORMATION SCIENCES

Graduate Program Head	Mary Beth Rosson
Program Code	INSCI
Campus(es)	University Park (M.P.S.) World Campus (M.P.S.)
Degrees Conferred	Master of Professional Studies (M.P.S.)
The Graduate Faculty	View (https://secure.gradsch.psu.edu/gpms/index.cfm?searchType=fac&prog=INSCI)

The Master of Professional Studies in Information Sciences (MPS-INSCI) is an innovative program that targets professionals and organizational leaders who seek a professional education and training program. The purpose of the professional master's program is to produce professionals and organizational leaders who not only can select and draw upon the necessary foundations within the information sciences and information technology areas, test the applicability of these foundations for addressing a given issue, and apply the resulting solutions, but also can be aware of the multitude of technological trends and environmental factors that organizations must address in the changing global economy.

The MPS-INSCI equips students to:

1. Understand and analyze the profound information and technological changes sweeping the world;
2. Meet challenges by developing innovative solutions using the foundations of information sciences and technology; and
3. Have a clear advantage in today's highly competitive and dynamic environment by continuously learning new trends, issues, and innovations.

Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<http://gradschool.psu.edu/prospective-students/how-to-apply>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<http://gradschool.psu.edu/graduate-education-policies>).

Applicants to the program are required to submit scores from the general portions of the Graduate Record Examinations (GRE) or the Graduate Management Admissions Test (GMAT), three letters of reference, and a one-three page personal statement of relevant experience and goals. The GRE or GMAT requirement may be waived for applicants to the Master of Professional Studies Program at the discretion of the program if the student has five or more years of relevant information sciences and technology working experience.

Because the program is multidisciplinary in nature, students from many different disciplines may be accepted for entry into the program. A bachelor's degree in a related area (e.g., engineering and science), while not necessary for admission, is helpful in the successful completion of the degree. It is expected that students will have a basic level of competency in statistics, as well as computer and information technology. Related work experience can be used to demonstrate such competency. A student may be accepted into the program with provisional status ([http://gradschool.psu.edu/graduate-education-](http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/provisional-admission)

[policies/gcac/gcac-300/provisional-admission](http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/provisional-admission)) for no more than one year while work is completed to meet these expectations.

It is expected that the successful applicant will have an overall grade point average of 3.00 (on a 4.00 scale) or higher for his or her undergraduate study and/or graduate-level study. However, accomplishments demonstrated through work experience and recommendation letters from the applicant's academic adviser or employer will also play an important role in making the admission decision. The most qualified applicants will be accepted into the program until all spaces for new students are filled.

Degree Requirements

Master of Professional Studies (M.P.S.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-700 Professional Degree Policies (<http://gradschool.psu.edu/graduate-education-policies>).

The MPS-INSCI program requires a minimum of 33 credits, 24 of which must be earned at Penn State. A maximum of 9 transfer credits of high-quality graduate work may be applied toward the requirements for the degree, subject to restrictions outlined in the Transfer Courses (<http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/transfer-credit>) section of the *Graduate Bulletin*. At least 18 credits must be courses at the 500 or 800 level, with at least 6 credits at the 500 level. A student can choose to be in the Base Program or in the Cybersecurity and Information Assurance (CIA) Option.

The 33 credits are distributed among the following requirements. A student first takes 9-credits of core courses. The student then takes 12 credits of prescribed courses for either the base program or the Cybersecurity and Information Assurance Option. An additional 9 credits are elective courses. Lastly, the student must complete a master's project guided by the student's adviser and completed while enrolled in IST 594.

Core Courses

The core of the MPS-IS consists of three courses – IST 852, IST 554, and IST 816. These courses represent the core technical foundations to study Information Sciences and Technology.

The Base Program

The base program consists of four required courses - IST 815, IST 521, IST 532, and IST 564 - and 9 credits of elective courses, in addition to the 9-credit core and 3-credit capstone course. It is designed for students who do not have a special interest in mind. The elective courses are chosen in consultation with the student's adviser. Hence, it offers the flexibility that enables the student to build an in-depth knowledge and skills about information sciences tailored to his/her interests and background. Students from the Harrisburg region can also select courses from Penn State Harrisburg to fulfill the prescribed courses (by substitution) and 9 credits of electives.

Master'S Project

The project requires all students in the MPS-IS to focus on a well-defined issue or problem relevant to the information sciences and technology. The student will submit a project proposal to his/her faculty adviser for approval. Upon completion of the project, the student will share or present the project results at a final presentation as a component of IST 594.

Code	Title	Credits
Required Courses		
IST 852	Knowledge Management	3
IST 554	Network Management and Security	3
IST 816	Web Fundamentals	3
IST 815	Foundations of Information Security and Assurance	3
IST 521	Human-Computer Interaction: The User and Technology	3
IST 532	Organizational Informatics	3
IST 564	Crisis, Disaster and Risk Management	3
Electives		
Select 9 credits of elective courses chosen in consultation with the adviser.		9
Culminating Experience		
IST 594	Research Topics (Master's Project)	3
Total Credits		33

Cybersecurity and Information Assurance (CIA) Option

The CIA option consists of four prescribed courses, IST 815, IST 555, IST 456, and IST 885, and 9 credits of elective courses selected from a list of approved electives available from the program office, in addition to the 9-credit core and 3-credit master's project courses. These courses enable the student to focus on developing knowledge and skills for information analysis, information assurance, and decision support including theories, techniques, and applications of data mining, data fusion, information search, information security, and intelligent resource allocation.

Code	Title	Credits
Required Courses		
IST 852	Knowledge Management	3
IST 554	Network Management and Security	3
IST 816	Web Fundamentals	3
IST 815	Foundations of Information Security and Assurance	3
IST 555	Intelligent Agents and Distributed Decision Making	3
IST 456	Information Security Management	3
IST 885	Introduction to Multisensor Data Fusion	3
Electives		
Select 9 credits of electives from a list of approved electives available from the program office.		9
Culminating Experience		
IST 594	Research Topics (Master's Project)	3
Total Credits		33

Student Aid

Graduate assistantships available to students in this program and other forms of student aid are described in the Tuition & Funding (<http://gradschool.psu.edu/graduate-funding>) section of The Graduate School's website. Students on graduate assistantships must adhere to the course load limits (<http://gradschool.psu.edu/graduate-education-policies/gsad/gsad-900/gsad-901-graduate-assistants>) set by The Graduate School.

World Campus students in graduate degree programs may be eligible for financial aid. Refer to the Tuition and Financial Aid section (<http://>

www.worldcampus.psu.edu/tuition-and-financial-aid) of the World Campus website for more information.

Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Information Sciences and Technology (IST) Course List (<https://bulletins.psu.edu/university-course-descriptions/graduate/ist>)

Learning Outcomes

- [KNOW] Recognize, understand, identify and assess potential threats, vulnerabilities, and consequences in a context from local to global environments.
- [APPLY/CREATE] Integrate the use of disciplinary methods, techniques, and knowledge to solve practical, real-world problems.
- [COMMUNICATE] Present scientific evidence and best practice to inform and improve practical, real-world decisions.
- [THINK] Search, evaluate, and synthesize literature to integrate cyber security principles into disciplines and professional fields.
- [PROFESSIONAL PRACTICE] Make use of ethical standards and principles of integrity as a foundation in decision-making.

Contact

Campus	University Park
Graduate Program Head	David Joseph Fusco
Program Contact	Sherry Hartman College of Information Sciences and Technology E103 Westgate Building University Park PA 16802 slr8@psu.edu (814) 863-9461
Program Website	View (http://www.worldcampus.psu.edu/degrees-and-certificates/information-sciences-masters/overview)

Campus	World Campus
Graduate Program Head	David Joseph Fusco
Director of Graduate Studies (DGS) or Professor-in-Charge (PIC)	David Joseph Fusco
Program Contact	Sherry Hartman College of Information Sciences and Technology E103 Westgate Building University Park PA 16802 slr8@psu.edu (814) 863-9461
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