



ITINT Option

Information Technology: Integration and Application

1. What campuses offer this option? Not all options are available at all campuses, so be sure to [check for availability](#) at your campus.

2. What specific knowledge and skills are the focus of this option?

You will learn about how organizations work and how information technology can be used as strategic resources to support their innovation, mission-critical activities, and business functions. We will cover several specialized topics including value chain, process modeling, workflow analysis, change management, enterprise systems, and middleware solutions. To succeed in the real world of IT consulting, you will need to learn project management, teamwork, problem-solving, and presentation skills.

3. a. How do the courses in this option integrate with each other?

The core courses in this option include IST 302 (IT Project Management), IST 420 (Fundamentals of Systems and Enterprise Integration), and IST 421 (Advanced Enterprise Integration: Technologies and Applications). They build on the central theme of use of IT to support organizational functions.

This option uses concepts and models from both the ISDEV and ISPP options; this option is intended to “fill the gap” between the other options. As a result, courses from ISDEV and ISPP options will add considerable value to what you will learn in ITINT. Specifically, courses such as IST 311 (Object-Oriented Design), IST 331 (Organization and Design of Information Systems: User and System Principles), and IST 431 (Information Environment) can add depth to what you will learn in this option.

b. What other Penn State courses would you recommend to supplement this option?

In addition to the other IST 300-level courses, any courses that would add further depth, domain-specific, and other contextual knowledge in either the technology or the environment would be of value. For example, if you wish to learn more about technology, you may wish to supplement with courses in computer science; and if you wish to learn more about the environment, you may wish to take courses that deal with business fundamentals and entrepreneurship.

4. Students majoring in IST will be prepared to work in many different areas:

What are specific examples of the activities /work assignments that best illustrate this option?

- How can IT help an organization like Coca-Cola that needs to coordinate manufacturing, distribution, finance, inventory, and many other functions?

- How does an organization like Best Buy track inventories at different stores to ensure maximum availability with minimal inventory costs with the help of IT?
- How can IT help coordinate information sharing and better decision making in a network of humanitarian relief organizations?
- How can IT help governments develop and implement a large-scale IT project such as municipal wireless networks?

These kinds of questions are difficult to address for software designers, who are primarily concerned with building software. They also are difficult for managers who may not know enough about Information Technology. The IT integration option is designed to prepare you with a combination of organization and technology skills so you can attack questions just like these. The option fills the gap between the “Technology” option that teaches you how to create IT solutions, and the “Context” option that teaches you about different aspects of the organizational and societal environment.

5. What related or additional information should students focus on outside of classes?

There are several trade publications that best describe the concerns this option addresses. Most also have companion Web sites. Some of these are CIO.com, www.datamation.com, www.knowledgestorm.com, and www.informationweek.com. You also will benefit by keeping up with magazines like *Business Week*, *The Economist*, and newspapers such as *Wall Street Journal* and *New York Times* Technology section.

6. Recommended Web sites that supplement this option and the IST major:

- www.datamation.com
- www.informationweek.com
- <http://news.com.com> (C/Net news)
- <http://www.wired.com> (*Wired*)
- http://news.zdnet.com/2001-1_22.html (ZD/Net)

7. What are typical job descriptions for IST graduates in the Integration and Application option? Please note: The following is a brief list containing some of the career positions an ITINT graduate may encounter. It is not intended to serve as a comprehensive career guide, but rather to give students a sense of the general pathways to which this option may lead. Graduates from IST successfully apply their broad-based technology background in myriad professional settings. Some IST graduates also choose to continue their studies in graduate or professional schools.

- **Application Systems Analyst:** College degree in Information Science, Library Science or related field required. Ideal candidate will have at least one year of experience developing HTML documents and with content management. Applicants will have strong, demonstrated analytical and PC skills, and the ability to work in a very demanding, dynamic team environment. Position requires up to 5 percent travel.

This position entails experience in full system development life cycle and the ability to develop requirements documentation. Analyst will lead small to medium-sized projects, coordinate activities across diverse planning centers (multiple locations), and need to gain full working knowledge of internal sales processes and procedures.

- **IT Entry-level Trainee Program:**

- Assists in the evaluation of business processes and needs in order to formulate programming/systems specifications and programming logic from which an information system will be developed, taking into consideration computer equipment capacity, limitations, operating time, and form of desired results.
- Researches alternative solutions and recommends the most efficient and cost-effective solution for applications systems development solution.
- Participates in system testing and utilizes data verification methods and standard tools to analyze functionality of system in light of production requirements of client management.
- Review the results of systems tests, makes adjustments to system design, prior to implementation.
- Designs, codes, tests, and debugs applications systems using programming languages and systems architectures within operating environment of organization.
- Basic knowledge of applications design, testing, and development.
- Excellent communication skills, written and verbal.
- Excellent problem-solving and analysis skills.
- Ability to work independently as well as in a team environment.
- Bachelors Degree, Min GPA: 3.0.
- Technical competency may include, but are not limited to: C++, Visual Basic, SQL, COBOL, UNIX, DB2, Java, HTML, etc., (is a plus).