USC Viterbi
School of Engineering
Information Technology Program

INTRO
TECH
NOLOGY
CLASSES

About

The Information Technology Program at the USC Viterbi School of Engineering offers classes to all students across the university. In ITP classes, you can learn to use advanced software, create websites, perform data analysis, write computer programs, and investigate cybercrime.

You'll get practical, hands-on experience. No matter what your major is, you can learn how to use the latest tools, programming languages, and applications. You'll also gain critical insight into technology's increasing impact on our world.

All students are welcome to register for ITP classes, and our introductory classes do not require a background in technology or engineering.

print "Hello, world!"

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Solve problems with programming

Learning to write in programming languages like Python teaches you how computers use logic to solve problems — and how you can think about solutions in new ways.

Make decisions using data

Learning to analyze data teaches you how to make informed decisions.

Tell stories on screens

Learning to create digital graphics, 3D models, and user experiences teaches how you to effectively communicate.

2-unit classes

Become a Microsoft Excel and Adobe Dreamweaver master

Use HTML, CSS, and JavaScript to design websites

Learn Python, a great programming language for data analysis and web development

Study cyber threats investigation, and defense

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ITP-101

Introduction to Business Information Technologies

Survey computer hardware, operating systems, networks, programming, and software to understand how technology accomplishes business goals. You'll learn how to use advanced spreadsheet features in Microsoft Excel, databases in Access, and mail merge in Word. You'll also explore security issues, digital communication practices, social media marketing, and new technologies.

ITP-104

Web Publishing

Design, code, and publish websites using HTML, CSS, and JavaScript. You'll practice using web development tools, styling with custom layouts and fonts, and adding JavaScript for interactivity. You'll learn how to create image galleries, forms, and animations — and how to publish your sites to web servers. By creating many webpages and practicing markup, styling, and interactivity, you'll prepare for more advanced topics in web design and development.

ITP-115

Programming in Python

Start writing programs in the Python language, an easy-to-read programming language used for web applications, data analysis, and scientific research. You'll learn to think like a programmer to solve problems, control flow, and implement graphical user interfaces (GUIs) to create simple programs. This class is the introduction to the core programming sequence (ITP-115 → ITP-265 → ITP-365) — by the end of the semester, you'll be prepared for more advanced topics in object-oriented programming and web, mobile, and desktop application development.

ITP-125

From Hackers to CEOs: Introduction to Information Security

Crack passwords, recover deleted files, create and identify spoof emails, and discuss current issues in the field to develop a foundation in cybersecurity and digital forensics. You'll study threats to information integrity, learn about security mechanisms and policies, and study how security infrastructure intersects with business and IT functions. Prepare for advanced courses in ethical hacking, information security, and digital forensics.

Learn to use Adobe Photoshop, Illustrator, and InDesign

Edit videos and create motion graphics in Apple Final Cut Pro and Motion

Create 3D characters from scratch in Autodesk Maya

Design and print 3D prototypes for new devices
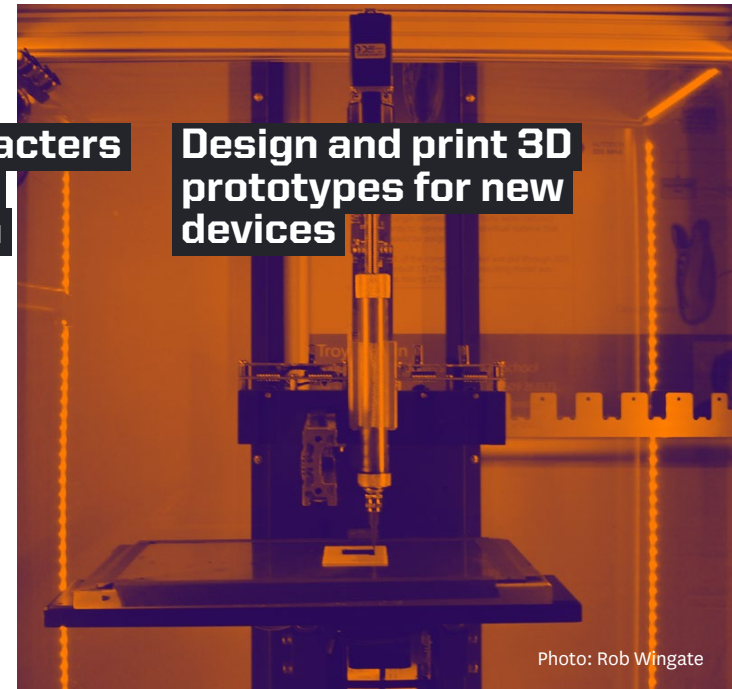
Photo: Jakob Owens

Photo: Rob Wingate

ITP-190

Tools for Digital Graphics

Learn how to use Adobe Photoshop to create, edit, and export images and photographs. You'll explore the user interface, toolsets, and advanced features to design postcards, book covers, product packaging, magazine covers, and t-shirt designs. You'll learn how to work with layers and masks, draw and create vector graphics, work with type and color, and prepare images for professional print and web output. You'll also learn how to use Adobe Illustrator and InDesign to complement your graphic design work in Photoshop.

ITP-211

Power-Tools for Visual Communication

In a world where videos move millions and a picture is more powerful — and popular — than the written word, a key survival skill in college and into future careers is how well you communicate with images. Learn how to use software in three key areas — still images, motion graphics, and video editing — to communicate your ideas with impact. You'll use Adobe Photoshop, Audition, Apple Motion, and Final Cut Pro to create compelling posters, videos, presentations, and commercials.

ITP-215

Introduction to 3D Modeling, Animation, and Visual Effects

Learn how to create 3D characters, animations, environments, and objects using Autodesk Maya. By practicing different 3D modeling, surfacing, and special effects tools, you'll gain an applied foundation in the creation of 3D content for animation, games, entertainment, and design. You'll also explore the production cycle of animation, what pipelines are and how they are implemented to support the production process, and how to manage vision, budget, and time constraints.

ITP-228

Computer-Aided Modeling for 3D Product Design

Learn how to use 3D modeling software and 3D printers to manufacture prototypes for smart devices. Create a variety of 3D models, prepare products for printing, successfully print products, and work with Raspberry Pi enclosures. You'll also explore how to design products based on manufacturing needs and work within manufacturing limitations and scope.

4-unit classes

Maintain quality and track bugs in video games

Photo: Unsplash

Work with databases and make data-driven decisions

Learn how Bitcoin works and use blockchain to solve real-world problems

Photo: Unsplash

Learn how to produce video games

Photo: Rebecca Oliver

ITP-230

Video Game Quality Assurance

Survey the game software development cycle, quality assurance, and bug testing. You'll learn how to use online bug-tracking software systems like Bugzilla as well as offline bug-tracking spreadsheets — and you'll learn the best communication practices to report software problems so that they can be fixed by the development team. You'll also explore the retail side of video game development, pre-production, test trees, test flow diagrams, and quality appraisal. Upon completion of this class, you'll be able to fulfill the job requirements of an entry-level quality assurance tester in the video game industry.

ITP-249

Introduction to Data Analytics

Data is an integral part of business and society. To be successful in today's business landscape, you need to be able to leverage data to make critical business decisions. Learn how to use Excel, SQL, NoSQL, and leading industry tools to collect, clean, and analyze data, interpret data, present insights using data visualization and dashboards, and tell compelling stories with data.

ITP-256

Blockchain

Blockchain technology is wider and has more use cases than just one of its most popular applications: the Bitcoin cryptocurrency. Explore blockchain technology and its applications in cryptocurrency, financial services, government, contracting, and more. You'll learn how blockchain works, the real-world problems that blockchain tries to solve, and how decentralized applications can be built on the blockchain. You'll prepare to propose new use cases for blockchain and to build applications on platforms like Ethereum in advanced classes.

ITP-280

Video Game Production

Explore the video game development process — including design, art, programming, and management — and the project lifecycle from concept to launch. You'll practice creating game prototypes using various hardware and software tools that aid in the video game production process. You'll also discuss how programmers can include features like artificial intelligence (AI), network and multiplayer support, and graphic and sound effects.

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Tom Sloper
Richard Vawter
Kendra Walther
Matt Whiting
Lance Winkel

PROGRAMS

3D Computer Graphics and Modeling
Applied Analytics
Applied Computer Security
Blockchain
Computer and Digital Forensics
Computer Programming
Connected Devices and Making
Enterprise Information Systems
Innovation: The Digital Entrepreneur
Mobile App Development
Video Game Design and Management
Video Game Programming
Web Technologies and Applications

AFFILIATED PROGRAMS

Data Science
Foundations of Data Science
Intelligence and Cyber Operations

PROGRAM STAFF

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ACADEMIC ADVISOR	Tim Gotimer
OFFICE & EVENTS COORDINATOR	Annie Le
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USC University of Southern California