AUTOMATED SOFTWARE TESTING PROGRAM

A ten-week program covering software testing strategies and tools and techniques for software test automation

The software testing landscape is undergoing seismic changes due to the increasing availability of open-source tools, security threats, and the move towards shift left and shift right testing. DePaul University’s Automated Software Testing Program will cover successful approaches to automated software testing for the web using such test tools as Python® and its packages such as BeautifulSoup, Selenium, and Pytest as well as Postman and JMeter. It is ideally suited for technical professionals with some programming experience who wish to learn the skills to build and deliver automated testing solutions. Students will gain an understanding of how to use tools available for software testing as well as the underlying concepts of automated software testing. Students will also learn how to perform load testing, do visual testing, and how automated testing fits in with continuous integration.

Program content includes lectures, demos and hands-on exercises. Students are required to bring their laptop computers for hands-on coding to every class.

YOU WILL BE ABLE TO:

- Use Python and related testing libraries to run: functional tests, unit tests-BDD and TDD, visual tests, and perform website scraping
- Configure Python environment with: Git/GitHub, Linter, Pytest and various other libraries
- Understand Internet/browser architecture to know what type of test is appropriate for a particular situation
- Be able to explain Selenium architecture
- Know the difference between TDD and BDD and be able to explain strengths/weaknesses of both. Also, be able to write TDD software tests.
- Understand visual testing and its advantages over traditional automated Selenium tests
- Understand the strengths/weaknesses of automated testing and explain when an automated test is warranted
- Understand and explain the test automation pyramid
- Understand performance testing and explain the differences between: a) load testing, b)stress testing, and c) soak testing and explain the various metrics to be collected and how they differ from AI testing
- Demonstrate the ability to write test cases and implement them in Selenium using XPath and CSS selectors
- Understand continuous integration and its benefits
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GENERAL INFORMATION

ADMISSION
Applicants should have at least six months of IT-related work experience, along with experience programming in a modern language (for example, Java, Python or C++). Basic experience with a personal computer running Windows is assumed.

A substantial commitment of time is required for this intensive course of study. Final admission will be determined by the admissions committee on the basis of an applicant's overall qualifications, including work history and educational background.

SPECIFICATIONS FOR STUDENT'S LAPTOP
Students will be instructed to download and install a variety of software packages on their personal laptops and bring these laptop computers to class. Instructions will be provided on the first day of class. The following minimal hardware and software requirements are necessary for successful installation of the software.

- Operating System: Windows 7 or later; Windows 10 is preferred
- Processor: 1 gigahertz (GHz) or faster processor or SoC
- RAM: 1 gigabyte (GB) for 32-bit or 2 GB for 64-bit
- Hard disk space: 16 GB for 32-bit OS or 20 GB for 64-bit OS
- Graphics card: DirectX 9 or later with WDDM 1.0 driver

Students must have full administrator rights to their personal computers in order to successfully install and use the software. Unfortunately, we have found other operating systems (such as MAC OS) to be not compatible with the software used in the program.

FACILITIES
To promote the learning process, the Institute maintains special-purpose laboratories as well as dedicated classrooms equipped with state-of-the-art audio/visual equipment.

In addition, the college’s unique Course OnLine (COL) technology allows students to replay classes over the Internet. COL captures the essential elements of our on-campus classes—the lecture itself and information displayed in class and written on the board—incorporating into a flexible interface, available online only a few hours after the class session ends.

SCHEDULE
The Institute offers the program each quarter. Classes meet one evening per week. The option to take the program entirely online is also available.

FACULTY
The faculty consists of a team of instructors from the College of Computing and Digital Media and experts from industry. Faculty will be available throughout the program both in person and through electronic mail.
The college, through its School of Cinematic Arts, School of Computing, and its School of Design, offers a variety of programs at the undergraduate and graduate levels. Over 3,000 students are enrolled in the college’s bachelor’s programs and about 2,000 students are enrolled in the master’s and Ph.D. programs making the college’s graduate program one of the largest in the country. The college offers close to 500 courses each quarter, many in the evening, and primarily in the Loop and Lincoln Park Campuses. Most of the degree programs are also available exclusively online.

**Offerings at the undergraduate level include:**
- Animation B.A. / B.F.A.
- Computing B.A.
- Computer Science B.S.
- Cyber-Physical Systems Engineering B.S.
- Cybersecurity B.S.
- Data Science B.S.
- Film and Television B.A. / B.F.A.
- Game Design B.S.
- Game Programming B.S.
- Graphic Design B.F.A.
- Information Systems B.S.
- Information Technology B.S.
- Math and Computer Science B.S.
- Network Engineering and Security B.S.
- User Experience Design B.S.

**Offerings at the graduate level include:**
- Animation M.A.
- Business Information Technology M.S.
- Computational Finance M.S.
- Computer Science M.S.
- Cybersecurity M.S.
- Data Science M.S.
- Digital Communication and Media Arts M.A.
- E-Commerce Technology M.S.
- Experience Design M.A.
- Film and Television M.S.
- Game Programming M.S.
- Health Informatics M.S.
- Human-Computer Interaction M.S.
- Information Systems M.S.
- Network Engineering and Security M.S.
- Product Innovation and Computing M.S.
- Software Engineering M.S.
- J.D./M.S. in Computer Science Technology
- Master’s of Fine Arts
- Animation
- Creative Producing
- Documentary
- Film and Television Directing
- Game Design
- Screenwriting
- Ph.D. in Computer and Information Sciences
- Ph.D. in Human Centered Design

**INSTITUTE FOR PROFESSIONAL DEVELOPMENT**

The Institute for Professional Development was formed by the college in 1984 to assist both individuals and businesses in keeping pace with the rapid development of computer technologies. The Institute currently offers a variety of intensive certificate programs in these areas:

- Advanced Python
- Advanced SQL
- Artificial Intelligence for Enterprise
- Automated Software Testing
- Big Data and NoSQL
- Big Data Using Hadoop
- Big Data Using Spark
- Cloud Computing Technologies
- Cybersecurity Risk Management
- Data Analytics with Excel and Tableau
- Data Science for Business
- Data Science: Programming with Python
- DevOps
- Fundamentals of Statistics and Machine Learning Using R
- Incident Response and Digital Forensics
- Introduction to SQL
- iOS Developer
- Machine Learning and Deep Learning
- Modern Information Technology
- Modern .NET Web Development
- SQL Server® Business Intelligence
- SQL Server® Database Administration
- Technology and Innovation
- Web Development with JavaScript and HTML5

**APPLICATION PROCEDURE:**

You do not have to be an existing DePaul student to take this certificate program. All interested parties must apply for admission. Prospective students may complete the [online application](#) and pay the (non-refundable) $40.00 application fee online during the application process. Alternatively, prospective students may print, complete and return the [printable application](#) via mail or email (ipd@cdm.depaul.edu), and mail the non-refundable $40.00 application fee (check or money order made payable to DEPAUL UNIVERSITY) to:

DePaul University
Institute for Professional Development
243 S. Wabash Avenue, Room 301
Chicago, IL 60604-2300

The terms “Python”, “BeautifulSoup”, “Pytest”, “Postman”, “JMeter” and “Selenium”, are either registered or unregistered trademarks of their respective owners. The Automated Software Testing Program at DePaul University is an independent program of study and is not affiliated with, nor has it been authorized, sponsored, or otherwise approved by external entities.