



**DEPAUL UNIVERSITY**

**COLLEGE OF COMPUTING AND DIGITAL MEDIA**

*Institute for Professional Development*

## **RUBY ON RAILS PROGRAM**

*An eight-week in-depth program covering Web development using the Ruby on Rails® framework*

DePaul University's Ruby on Rails Program is designed to provide programmers with an intensive and comprehensive introduction to the Rails® Web application framework including a thorough introduction to the Ruby programming language and environment. The program stresses an understanding of how the Rails architecture promotes agile development of robust software systems.

Classroom lectures and demonstrations will be complemented by reading and programming assignments. The software used in this course is all open-source and is freely available for download.

### **YOU WILL LEARN:**

- Rails basics
- Ruby language fundamentals
- Rails installation
- Model-View-Controller (MVC) architecture
- ActiveRecord and database migration
- ActionController
- ActionView
- REST and ActiveResource
- Migrations
- HTML templating
- RJS templates
- Application security
- Test-driven development
- Deployment and scaling
- Ajax support

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# RUBY ON RAILS PROGRAM

The Rails framework provides the developer with tools and software libraries for Web application development. Rails combines a suite of essential technologies—an MVC architecture; a standardized and powerful Object-Relational mapping (ORM); libraries for HTML templating, AJAX scripting, email communication and Web services; and an integrated test environment—unified by an aggressive application of Don't Repeat Yourself (DRY) and convention-over-configuration philosophies. These features of Rails promote high productivity compared to more traditional heavyweight frameworks. Rails also enables agile development, through rapid prototyping and a testing framework, of enterprise-level Web-based systems.

Rails' unique characteristics are based in large part on its implementation in the Ruby language, which is also the scripting language for Rails applications. A thorough understanding of Ruby is essential to unlocking the power of Rails. Ruby has a simple syntax, a strong object model, an unobtrusive type system, extensive built-in and third-party software libraries, and powerful programming abstractions such as closures. Ruby's dynamic object model makes it ideal for defining domain specific languages (DSLs) such as Rails. Ruby can also be used outside the Rails framework as a general purpose programming language.

The Ruby on Rails Program covers all relevant areas of the Rails framework and Ruby language. The ideal participant will have a solid programming background as well as basic knowledge of Web technologies. Students in the program are expected to do a considerable amount of work outside of class. Instructors will be accessible in person and through electronic mail.

## CURRICULUM

<b>INTRODUCTION/OVERVIEW</b>	Program overview.
<b>RUBY LANGUAGE</b>	Data types. Control structures. Objects, classes, modules, containers, and iterators. Regular expressions. Blocks and closures. Callbacks and hooks. Metadata and reflection. Exceptions.
<b>MODEL-VIEW-CONTROLLER (MVC) ARCHITECTURE</b>	Rails implementation of MVC using ActiveRecord, ActionController, and ActionView.
<b>APPLICATION DEVELOPMENT</b>	Rails installation. RubyGems. Rake. Scaffolds. Migrations. Unit and functional testing. Test-driven development. Application security.
<b>APPLICATION LIBRARIES</b>	RJS templates. AJAX support.
<b>DEPLOYMENT AND SCALING</b>	Deploying to production Web servers. Configuring sessions. Caching. Assets.

## **GENERAL INFORMATION**

### **ADMISSION**

Applicants must have a solid programming background (at least two years of professional software development experience is required) as well as basic knowledge of Web technologies.

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.

### **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 and replays five components of the classroom experience—audio, video, PC screen, whiteboard, and document camera input—and incorporates them into one interface to provide an innovative rebroadcast system.

### **SCHEDULE**

The Institute offers one section of the program each quarter. Classes meet on Monday and Wednesday evenings and in the morning on approximately half of the Saturdays in the program.

### **FACULTY**

The faculty consists of a team of instructors from the College of Computing and Digital Media and experts in industry. Faculty will be available throughout the program both in person and through electronic mail.

## **COLLEGE OF COMPUTING AND DIGITAL MEDIA**

The college, through its School of Computing and its School of Cinema and Interactive Media, offers a variety of programs at the undergraduate and graduate levels. Over 1,000 students are enrolled in the college's bachelor's programs and over 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 more than 200 courses each quarter, many in the evening, in several locations: the Loop Campus, the Lincoln Park Campus, the O'Hare Campus, the Naperville Campus, and the Rolling Meadows Campus. Many of the degree programs are also available exclusively online.

Current offerings at the undergraduate level include:

### *School of Computing*

Computer Games Development  
Computer Graphics and Motion Technology  
Computer Science  
Computing  
Information Assurance and Security Engineering  
Information Systems  
Information Technology  
Interactive Media  
Math and Computer Science  
Network Technology

### *School of Cinema and Interactive Media*

Animation  
Computer Games Development  
Computer Graphics and Motion Technology  
Digital Cinema  
Interactive Media

Current offerings at the graduate level include:

### *School of Computing*

Applied Technology  
Business Information Technology  
Computer Graphics and Motion Technology  
Computational Finance  
JD/MS in Computer Science Technology  
JD/MS in Computer Science Technology  
Computer Information and Network Security  
E-Commerce Technology  
Human-Computer Interaction  
Information Systems  
Information Technology  
Instructional Technology Systems  
IT Project Management  
Software Engineering  
Telecommunications Systems

### *School of Cinema and Interactive Media*

Computer Games Development  
Computer Graphics and Motion Technology  
Digital Cinema – MS  
Digital Cinema – MFA  
Human-Computer Interaction

## **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 SQL
- IT Project Management
- Java™ Developer
- Java™ EE Developer (formerly J2EE Developer)
- Java™ Web Services
- Lightweight Java™ Web Development
- .NET Developer
- Ruby on Rails®
- SharePoint® Developer
- SQL Server® Business Intelligence
- SQL Server® Database Administration
- Web Development with Python®

## **APPLICATION PROCEDURE:**

Complete the enclosed application and return it with a non-refundable \$40.00 application fee (check or money order made payable to DEPAUL UNIVERSITY) to:

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