

Edge Tech Academy

Catalog Addendum

Effective: 03/01/2019

Short-Term Professional Development Course Descriptions

These courses are designed as professional development courses for those individuals already employed in associated career fields. Short-term professional development courses do not lead to nor may they transfer into to the Software Development diploma program. These courses are not included within the school's scope of ACCSC accreditation.

Short-term Professional Development Courses

- User Interface Design
- SQL and Database Design
- Full Stack Java
- Full Stack C#
- Full Stack JavaScript
- Mobile and App Development
- Agile Software Development
- Web Development

SD3101	<p>This course is an introduction to user interface design, using HTML 5, CSS supplemented with Bootstrap styling, JavaScript, and AngularJS functionality. Students will learn the JSON data structure and how to implement it to transfer data between the user interface and the database to create a two-layer web application.</p> <p>The HTML 5 topics will include but are not limited to elements, attributes, classes, Iframes, entities, forms, canvas, and media tags. Souder's performance recommendations will be discussed along with other best practices and various design choices. Students will learn how to style their markup using Cascading Style Sheets with original classes as well as Bootstrap supplemental technologies.</p> <p>The fundamentals of the JavaScript language will be covered with an emphasis on the Document Object Model. JQuery and Ajax will be implemented in creating a CRUD system. Angular JS and Typescript will be introduced as supplementary to JavaScript and JQuery in building this functioning CRUD site.</p>
User Interface Design	
80 Total Clock Hours (Lecture 40, Lab 40)	

SD3102	<p>This course introduces students to the SQL language and how to utilize it to write complex queries for extraction of and transactions on a relational database supporting complex business applications. A general overview of database design principles will provide students with an understanding of data modeling, data normalization, and relational models.</p> <p>Students will spend a considerable amount of time learning the SQL language. The basic select, insert, update, and delete statements will be covered as well as clauses, data types, and compound statements. Joins, Unions, SQL functions, and temporary tables will be implemented in creating more complex queries and stored procedures.</p>
SQL and Database Design	
20 Total Clock Hours (Lecture 10, Lab 10)	

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SD3103	<p>In this course, students will learn the fundamentals of building the server components of a full stack web application using Java, MySQL, and Spring Boot. The Java programming language to create the controlling business logic, MySQL for the data model, and Spring Boot framework to tie the data model to the business logic.</p> <p>Students will utilize a development platform configured with Java JDK, MySQL, and IntelliJ IDE. Together they provide a development platform experience to design, create and test web applications. Topics covered include the fundamentals of Java, object-oriented programming, development patterns using the Model View Controller (MVC), web applications principles, responding to HTTP methods (including GET, PUT, POST), and application server architectures.</p>
Full Stack Java	
100 Total Clock Hours (Lecture 50, Lab 50)	

SD3104	<p>In this course, students will learn the fundamentals of building a full stack C# web application using the ASP.NET MVC framework. Structured, event-driven and object-oriented programming concepts using the C# language will be introduced and utilized to create the models and controllers in the MVC architecture. Students will learn routing, authentication, repository patterns, Razor syntax, MS SQL Object Explorer, and Entity Framework to develop a full stack web application.</p> <p>Core programming concepts in C# will be mastered including but not limited to Dot Net data types, methods and properties, classes, flow control, and collections. Advanced concepts will include recursion, linked lists, inheritance, and polymorphism. Students will develop business layer logic in the C# language with an emphasis on encapsulation and separation of concerns within the full stack environment.</p> <p>In addition to ASP.NET MVC web applications, students will survey a variety of different project types within Visual studio. They will learn how to deploy console applications, forms applications for both desktop and web, and mobile applications using the Xamarin tools. Each application will persist data to either a MSSQL or MySQL database. Students will also understand LINQ syntax and know how to use it within repositories to write advanced queries.</p>
Full Stack C#	
100 Total Clock Hours (Lecture 50, Lab 50)	

SD3105	<p>In this course, students will learn the fundamentals of building the server components of a full stack web application using JavaScript, Node.JS, Express, and MongoDB. The JavaScript and Node.JS programming languages to create the controlling business logic, MongoDB for the data model, and Express to tie the data model to the application logic.</p> <p>Students will utilize a development platform configured with Node.JS, Express, and MongoDB. Together they provide a development platform experience to design, create and test web applications. Topics covered include the fundamentals of JavaScript, object-oriented programming, development patterns using the Model View Controller (MVC), web applications principles, responding to HTTP methods (GET, PUT, POST...), and application server architectures.</p>
Full Stack JavaScript	
100 Total Clock Hours (Lecture 50, Lab 50)	

SD3106	<p>In this course, students will apply all that they have learned in the User Interface Programming and Java/C#/JavaScript courses to create a fully functioning full-stack application designed for the Mobile platform. The application must demonstrate competency in the following concepts: Be interface aware (orientation and screen size),</p>
Mobile App Development	

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80 Total Clock Hours (Lecture 15, Lab 65)	<p>be responsive to user interface (AJAX, screen swipes), appropriate use of the MVC design pattern, database design with at least one Master-Detail (one-to-many) relationship, support CRUD requests to the database, and address security considerations.</p> <p>Students may choose their language, framework and backend database. They will also choose their application to develop. It must solve a reasonable business need, fit well with the design constraints for mobile devices (tablet and phone). This is a team project targeted for mobile devices. Students will create the team, select, design, and build the application as a team. There will be some lecture during this course but the primary focus will be on the team application. Students will meet weekly with instructors for mentoring. Primary design, development and research will be the responsibility of the team. The final product will be a demonstrable application suitable for showing in a job interview.</p>
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SD3107	<p>“Agile software development is a set of principles for software development in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, and continuous improvement, and it encourages rapid and flexible response to change.” (<i>Agile Manifesto</i>)</p> <p>The course will instruct the student on the 12 principles of Agile Development and then the students will put them into practice. Using the live development environment provided by the team projects (SD 201) the students will determine the User Stories, prioritize the stories to define each Sprint, start developing, and continuously update the plan while regularly delivering working software. At the conclusion of the course and the team projects, the students will be conversant in the terminology of Agile and experienced in its application to real projects.</p>
Agile Software Development	
20 Total Clock Hours (Lecture 5, Lab 15)	

SD3108	<p>In this course, students will apply all that they have learned in the User Interface Programming and Java/C#/JavaScript courses to create a fully functioning full-stack web application. The application must demonstrate competency in the following concepts: Appropriate use of the MVC design pattern, database design with at least one Master-Detail (one-to-many) relationship, support CRUD requests to the database, and address security considerations.</p> <p>Students may choose their language, framework, and backend database. They will also choose their application to develop. It must solve a reasonable business need. This is a team project targeted for mobile devices. Students will create the team, select, design, and build the application as a team. There will be some lecture during this course but the primary focus will be on the team application. Students will meet weekly with instructors for mentoring. Primary design, development and research will be the responsibility of the team. The final product will be a demonstrable application suitable for showing in a job interview.</p>
Web Development	
80 Total Clock Hours (Lecture 5, Lab 75)	