



# Usman Institute of Technology

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## MOBILE AND CLOUD COMPUTING TECHNOLOGIES CERTIFIED FULL STACK ANDROID, IPHONE AND WEB DEVELOPER

**Covers Senior Web Developer Nanodegree by Udacity and Google**  
*Free Seminar on Sunday, April 9, 2017 at 1:30 pm*  
*Classes starting on Sunday, April 16, 2017*

<b>Mobile Technologies:</b>	<b>Android and iPhone Native Apps using Facebook's React Native</b>
<b>Web Technologies:</b>	<b>HTML5, CSS3, and Progressive Apps using Facebook's React, React Router, and Redux</b>
<b>Programming Languages:</b>	<b>JavaScript (ES 2015), TypeScript and WebAssembly</b>
<b>Server Technology:</b>	<b>Node.js with Express, Amazon Web Services Lambda, Serverless Framework</b>
<b>Cloud Platforms:</b>	<b>Salesforce's Heroku, Amazon Web Services (AWS) and Google Cloud</b>
<b>Cloud NoSQL Databases:</b>	<b>MongoDB</b>
<b>Real-time Cloud Database:</b>	<b>Google's Firebase</b>

### Two Semester Course

**Module A**  
Fundamentals of Mobile and Web Programming  
*Sunday: 1:30 pm-3:30 pm – Class*  
*3:30 pm-5:30 pm – Lab*



**Module B**  
Mobile/Cloud Application Development  
*Sunday: 1:30 pm-3:30pm – Class*  
*3:30 pm-5:30 pm – Lab*

Google, Apple, and Microsoft have unveiled their Mobile platforms: Android, iPhone, and Windows Phone. All the major mobile handset makers like Samsung, Nokia, Apple, Motorola, LG, Sony Ericsson, Dell, and HTC are supporting these technologies.

Another major technology trend is use of tablet and similar touch enabled devices for accessing the web and for general purpose computing. Apple with their iPad, Google with Android, and Microsoft with Windows 10 are targeting this market segment. Many experts are predicting that the touch enabled mobile computing will soon overtake the current main-stream mouse/keyboard PCs.

In 2017, a large number of web app professionals and developers have started implementing HTML5, CSS and JavaScript (ES 2015). These technologies are also becoming the main development option for mobile and tablet applications as well. Therefore, HTML5/CSS3 with JavaScript/TypeScript and React/React Native are emerging as the de-facto standard for client application development, may it be Websites, Mobile, Tablet, or PC applications: a single ubiquitous client platform to rule them all.

Amazon Web Services (AWS) and Google Cloud Platform have become the cloud platform of choice for developers. These platforms are built to work on a planetary scale supporting billions of users and trillions of transactions per day. They will allow anyone from hobbyists to enterprises to write and host applications on data centers located globally and running a vast number of machines. Cloud computing coupled with touch based mobile store apps are setting the stage for the next decade of computing.

UIT is pleased to announce a two module Certified Android, iPhone and Web Developer Program. The Certification will consist of two modules of course work spread over a duration of two semesters. It will also train you to prepare for the **Senior Web Developer Nanodegree from Udacity and Google** (<https://www.udacity.com/course/senior-web-developer-nanodegree-nd802>).

## COURSE DETAILS FOR MOBILE AND CLOUD COMPUTING

### **Module A1: Web Development withHTML5, CSS and Responsive Design**

This course is designed for the absolute beginners in web development and builds a solid foundation in HTML5 and CSS3. Assuming no prior programming experience on the part of the participant, this module focuses on the fundamentals of composing professional websites. This module ends with a detailed introduction to responsive website development.

**Prerequisite:** No web development experience required.

### **Module A2: Functional and Object-Oriented Programming with JavaScript and TypeScript**

This module builds a solid foundation in Functional and Object-Oriented Programming using JavaScript and TypeScript. Assuming no prior programming experience on the part of the student this module starts by focusing on the fundamentals of composing code with JavaScript. Introduction to both client and server based JavaScript is covered. You'll learn about the syntax and structure of the language including operators and expressions, control structures, methods, and arrays. Then we will shift to learning object oriented programming using TypeScript. Both Microsoft and Google support it. TypeScript is designed for development of large applications and transcompiles to JavaScript. As TypeScript is a superset of JavaScript, any existing JavaScript programs are also valid TypeScript programs. In this module we will also learn Git, the distributed version control system. We will also review Git based GitHub and BitBucket services.

**Prerequisite:** No programming experience required.

### **Module B1: Android, iPhoneand Web Application Development using React and React Native**

In this module we will learn how to develop Single Page Web and hybrid mobile applications using React, Material Design and React Native. React/Angular extends HTML with new attributes and is perfect for Single Page Applications (SPAs) and Mobile Apps. React is easy to learn and is widely being used. The React Native is built on top of React and allows you to build incredible iPhone and Android apps with web technologies.

**Prerequisite:** Completed Module A2

### **Module B2: Cloud, Serverless, and Real-time Application Development using Firebase, AWS Lambda Functions, Node.js, and MongoDB**

In this module we will learn to develop cloud and real-time web applications using Node.js, Lambda Functions, MongoDB and Firebase. We will explore how to develop cloud based web applications using Node.js on AWS, Heroku, and other cloud platforms. We will also explore NOSQL concepts using MongoDB. We then move on to study and explore other cloud based NOSQL Databases as well. We will also study real-time databases using Google's Firebase. It is a real-time database which provides an API that allows developers to store and sync data across multiple clients.

### **Module B3: WebAssembly Development**

WebAssembly or wasm is an efficient low-level programming language for in-browser client-side scripting. In this module we will learn compilation from C/C++/Rust.

### **Course Academic Coordinator:**

Mr. Zia U. Khan (<http://www.facebook.com/ziakhan.edu>)



will be the academic coordinator for this course. He has ten years of experience in teaching computer science subjects and over ten years of experience in development of business and financial software solutions. For eight consecutive years, in 2007, 2008, 2009, 2010, 2011, 2012, 2013and 2014he has received the Most Valuable Professional (MVP) Award from Microsoft USA. He has a Master of Science in Engineering (MS), Master of Business Administration (MBA), and Master of Accountancy (MAC), all three from Arizona State University. He is also a CPA and CMA in USA.

### **Course Details: Mr Atif Khan**

**Registration Fee: nil**

**Fee: 5000/- per semester**

**Classes only on Sundays**

**Contact:**

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### **Questions and Course Details:**

<https://www.facebook.com/groups/mobilecloudapps/>