## Internet and Web, Graduate Certificate

The graduate certificate in Internet and Web is a four-course (12 credit-hour) program. It is designed to provide broad training in web technologies on both the client and server sides, including various stack architectures and frameworks, recent technologies such as REST, and trends such as microservices. All students must take three required courses and one elective, subject to the Graduate School regulations.

A minimum of three courses must be taken from UMSL. A maximum of two courses can be used from the 4000-level. Courses may be substituted with the permission of the certificate coordinator.

Required Core Courses				
CMP SCI 4010	Web Development with Java	3		
CMP SCI 4011	Web Development with Advanced JavaScript	3		
CMP SCI 5012	Enterprise Web Development	3		
Electives		3		
Choose one of the foll	owing:			
CMP SCI 5020	Android Apps: Android Fundamentals			
CMP SCI 5030	Intelligent Web			
CMP SCI 5792	Mobile Computing, Networking, and Security			
CMP SCI 5750	Cloud Computing			
<b>Total Hours</b>		12		

Sign-offs from other departments affected by this proposal

Department	<b>Contact Person</b>	Phone #	<b>Objections</b>
S005150	Dinesh Mirchandani		No

## Rationale

We have the undergraduate certificate. We are updating the courses with new material and proposing graduate certificate.