### **Code \_\_: Modern Enterprise Webservices**

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##### Pre Requisites

| **Code** | **Title** |
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|  | Database Systems |
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**Aims**

Webservice is becoming the most powerful method used in modern enterprise systems to achieve seamless applications interaction and integration.

This course introduces the student to Webservices model, concepts and design patterns. It describes and compare various architectural styles used in service based application model with emphasis on RESTful services as one of the most popular architectural style used for webservices and APIs implementation.

The course also introduces the student to Cloud Computing and Serverless Computing in the context of implementing a robust and highly available webservice architecture.

**Outline Of Syllabus**

1. Introduction to webservices: history, background and definition of webservices.
2. Introduction to Service Oriented Architecture.
3. Overview of SOAP webservices: history and usage, SOA components.
4. Introduction to REST: REST architectural style, concepts, usage and advantages.
5. REST vs SOAP.
6. REST client: Consuming RESTful services.
7. Building RESTful Service using Java or Python.
8. Building a RESTful service for Database applications.
9. Restful Server: Hosting and publishing Restful services.
10. Webservices security and authorization.
11. OAuth 2.0 protocols for securing APIs and Webservices.
12. Introduction to Microservices :Microservices VS Service Oriented Architecture.
13. Webservices and Cloud Computing: overview of Amazon Webservices.
14. Introduction to Serverless Architecture.
15. Publishing serverless webservices on the Cloud.

##### Assessment Methods

| **Assessment Type** | **Weight** | **Description**  |
| --- | --- | --- |
| Midterm Exam | 30 | Written Exam |
| Final Exam | 40 | Written Exam |
| Practical Work | 30 | Practical Assignment 1 :building a sample web application, hosting and publishing webservices on webserver, consuming webservice client.Practical Assignment 2 :building and publishing Webservices on AWS using serverless architecture. |