# Web Engineering (3)

**Course Name:** Web Engineering (3)
**Course Code:** NWE406
**Credit hours:** 3
**Knowledge Domain:** Network and Web Engineering
**Prerequisite(s):** Web Engineering (2) (NWE405)

## Learning Objectives

Upon completion of this course, the student will be able to:

1. Grasp the basic elements of the Semantic Web.
2. Understand the role of RDF and its XML syntax and RDF schema.
3. Grasp the concept of Ontologies and their applications.

## Learning Outcomes:

1. Grasping the basic components of the Semantic Web and the role of XML and RDF and their derivatives.
2. Grasping the main concepts of ontologies, their languages and their applications.

## Overview and Syllabus

Introduction to the Semantic Web. Basic elements of Resource Description Framework (RDF). XML syntax for RDF and RDF capabilities. RDF schema. Ontologies. Ontology applications.

## Course Outline

| | Topic |
|---|---|
| 1 | **Module 1: introduction and end**<br>1. Course introduction<br>2. Today's web<br>3. Semantic web in business<br>4. Semantic web application |
| 2 | **Module 2: Ontology**<br>1. Knowledge Engineering process<br>2. Ontology concepts<br>3. Ontology engineering |
| 3 | **Module 3: Resource Description Framework (RDF)**<br>1. Semantic web languages<br>2. From XML to RDF<br>3. Foundations of RDF |

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| | 4. RDF schema<br>5. RDF layers |
| 4 | **Module 4: Web Ontology Language (OWL)**<br>1. OWL concepts& Structure<br>2. OWL & RDF<br>3. OWL with examples in Protégé |
| 5 | **Module 5: Ontology Editor Protégé**<br>1. OWL & Protégé<br>2. Reasoning examples |
| 6 | **Module 6: Semantic Web Activities & Future**<br>1. Effect on Business<br>2. Role of Ontologist & Semantic Web Engineer |