

Title of the course: Compiler Design

Lecturer: Dr.Y. Kord Tamandani

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Assessments:

Mid-term Exam	4 points
Final Exam	11 points
Class Activity	3 points
Attendance	2 points

Subjects to be discussed:

TOPICS	SESSIONS	OBJECTIVES
INTRODUCTION TO COMPILERS	1st and 2nd sessions	<ul style="list-style-type: none">• What is a compiler• What is an interpreter• Difference b/w compilers and interpreter• Advantages and disadvantages of compilers• What high level languages use compilers and what languages used interpreters
DIAGRAM OF A COMPILER AND FUNCTIONALITY OF EACH PART	3rd and 4th sessions	<ul style="list-style-type: none">• Diagram of a compiler• Functionality of each part of a compiler• How a compiler exactly works
CATAGORIES OF PARSERS	5th section	<ul style="list-style-type: none">• Different parsers• Top down and bottom up parser and their differences• Recursive descent and non-recursive descent parser

<p>GRAMMER AND PARSER TREE</p>	<p>6th ,7th and 8th Sessions</p>	<ul style="list-style-type: none"> • What is a parser tree • What is an ambiguous grammar • Left recursion (LR) and Right recursion (RR) • LMD and RMD • Deterministic and Non-deterministic(ND) grammar • Removing RR and ND from a grammar
<p>LL(1) PARSER</p>	<p>9th and 10th session</p>	<ul style="list-style-type: none"> • Different parts of a LL (1) parser • First () and Follow () functions • How LL (1) parser works with example
<p>OPERATOR PRECEDENCE PARSER</p>	<p>11th and 12th sessions</p>	<ul style="list-style-type: none"> • How it works • What is operator relation table and how to build it • What is Function table and its functionality
<p>CATAGORIES OF LR PARSERS</p>	<p>13th ,14th and 15th sessions</p>	<ul style="list-style-type: none"> • Different LR parsers and their components • LR (0) parser, how to build its table and how it works • SLR (1) parser, how to build its table and how it works • LALR (1) parser, how to build its table and how it works • CLR (1) parser, how to build its table and how it works
<p>CHECKING GRAMMAR TO USE WITH LR PARSERS</p>	<p>16th and 17th sessions</p>	<ul style="list-style-type: none"> • RR and SR conflicts • Checking if a grammar can be used with different LR parsers or not