

Syllabus		
Unit No.	Contents	Mapped CO
I	<p>Language Processors: Overview of language processing system: – preprocessors – compiler – assembler – Linkers & loaders, difference between compiler and interpreter- structure of a compiler:–phases of a compiler.</p> <p>Lexical Analysis: - Role of Lexical Analysis – Input Buffering – Specification of Tokens – Recognition of Token – The Lexical Analyzer Generator (LEX).</p>	CO1,CO2
II	<p>Syntax Analysis: –Introduction: - Role of a parser – Context Free Grammar – Writing Grammar.</p> <p>Top Down Parsing: – Recursive Descent Parsing-FIRST and FOLLOW- LL(1) Grammar – Non recursive Predictive Parsing- Error Recovery in Predictive Parsing.</p>	CO1,CO3
III	<p>Bottom up Parsing: – Reductions – Handle Pruning - Shift Reduce Parsing – Conflicts During Shift–Reduce Parsing.</p> <p>Introduction to simple LR Parsing: – Why LR Parsers – Model of an LR Parsers — Construction of SLR Tables.</p> <p>More powerful LR parsers: -Canonical LR(1) items ,Construction of CLR (1) parsing table – Construction of LALR Parsing tables.</p>	CO1,CO3
IV	<p>Syntax Directed Translation: Syntax Directed Definitions, Evaluation Orders for SDD’s, Applications of Syntax-Directed Translation, Syntax-Directed Translation Schemes for Postfix Translation Schemes –Parser Stack Implementation of Postfix SDT’s.</p> <p>Runtime Environment: - Storage organization - Stack allocation – Static allocation - Heap management-Introduction to Garbage Collection.</p> <p>Intermediate code: - Variants of Syntax Trees - Three address code – Quadruples - Triples - Indirect Triples.</p>	CO1,CO2
V	<p>Optimization of Basic Blocks: – DAG representation of basic block. Machine independent code optimization - Common sub expression elimination - Constant folding - Copy propagation -Dead code elimination - Strength reduction - Loop optimization.</p> <p>Machine dependent code optimization: - Peephole optimization – Register allocation - Instruction scheduling - Inter Procedural Optimization - Garbage collection via reference counting.</p>	CO1,CO4

Learning Resources
Text Books
1. Compilers: Principles, Techniques and Tools, Alfred V. Aho, Monica S. Lam, Ravi Sethi, Jeffrey D. Ullman, Second Edition, Pearson Education.
References
1. Modern Compiler Implementation in C- Andrew N. Appel, Cambridge University. 2. Principles of compiler design, V. Raghavan, Second edition, 2011, TMH. 3. Compiler Design, Muneeswaran K. First Edition, 2012, Oxford University Press.
e-Resources and other Digital Material

1. <http://www.nptel.iitm.ac.in/downloads/106108052/>
2. http://www.vssut.ac.in/lecture_notes/lecture1422914957.pdf