Course Name	Theory of Compilers		Course Code	433 COMP-3	
Credit Hour	3	Contact Hours	Lecture	Lab	Total
			2	2	4
Track	☐ University Requirement ☐ College Requirement ☒ Program Requirement		☒ Required ☐ Elective		
Offered in	☒ BS- Computer Science ☐ BS- Information System ☐ BS- Computer & Network Engineering				
Level	10	Prerequisites	None		

Course Description:

This course presents an introduction to compilers phases –analysis, synthesis, lexical analysis, regular expressions, finite automata NFA and DFA. Syntax Analysis, context-free grammar, ambiguity, top-down parsing - recursive descent and LL(K), bottom-up parsing, shift reduce parsing, introduction to LR parser, semantic analysis, syntax directed translation, intermediate code generator-three address code, storage organization, heap management, code generation, and code optimization.

Course Objectives:

These are the objectives of the course:

1. Enrich the knowledge in various phases of compiler and explore the understanding of how compilers translate source code to machine executable form.
2. Convert regular expression to its equivalent finite state machine to accept a specified language.
3. Familiarize students with parsing and syntax-directed translation techniques.
4. Use different compiler optimization schemes in addition to efficient register allocation.
5. Provide practical programming skills necessary for constructing a compiler.

Grading						
	☒ Assignment 1	10 %	☒ Exam-1	10%	☒ Exam-2	10%
	☒ Assignment 2 / Case studies	10%	☒ Lab Exam	20%	☒ Final	40%

Textbook:

Required: Aho, Lam, Sethi, and Ullman, "Compilers: Principles, Techniques, & Tools", Second Edition, Pearson 2007. ISBN-10:0321486811.

Reference Books:

1. Modern Compiler Implementation in Java, Second Edition by Andrew W. Appel and Jens Palsberg ISBN:052182060x Cambridge University Press © 2002
2. Engineering a Compiler, Second Edition --February 21, 2011, by Keith Cooper , Linda Torczon ISBN-978-0120884780 ISBN-10: 012088478X.
3. http://java.sun.com/docs/books/tutorial/