Department of Electrical and Computer Engineering
North South University (NSU)

Course Outline – Spring 2019
CSE 425: Concepts of Programming Language

Instructor: Dr. Md. Mahfuzur Rahman, Assistant Professor, ECE Department, NSU
Office Location: SAC 1044A
Office Hours: **S** : 11:45 - 12:45, **M** : 10:15 - 11:15 & 3:00 - 7:00,
            T : 11:45 - 12:45, **W** : 10:15 - 11:15

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Course Summary:

This course covers the fundamental concepts of different programming languages by discussing the design issues of the various language constructs, examining the design choices for this construction in some of the most common languages, and critically comparing language design alternatives. Specifically, the course covers – Programming Paradigm and Language Categories, Language Design & Evolutions, Syntax & Semantics, Lexical & Syntax analyzers, Names, Scopes & Bindings, Datatypes & Type checking, abstract data types, Statements & Expressions, Subprograms, Object-Oriented Programming, Concurrency, Exception Handling, Functional and Logic programming languages etc.networks. Concept of object orientation as a data abstraction technique will be introduced.

Course Objectives: The objectives of this course are to

a. illustrate the programming paradigms, principles, fundamental concepts and techniques involved in design and implementation of major programming languages
b. elaborate key programming concepts of major imperative, declarative, and object-oriented programming languages, their merits and limitations
c. familiarize , concurrency control, and exception handling
d. demonstrate key concepts of functional and logic programming languages, their purpose and applications

Course Credit: 3 credits

Pre-Requisites: CSE 225: Data Structures and Algorithms

Textbook: Programming Languages: Principles and Practices by Kenneth C. Louden and Kenneth A. Lambert, Course Technology, Cengage Learning, 2012 (3rd Edition).

Reference Text & Materials:
- Concepts of Programming Languages by Robert W Sebesta, Pearson (10th edition)

- Comparative Programming Languages by Leslie Wilson, Robert, Addison-Wisley
- Additional reading materials will be provided and uploaded in the course website

Class Schedule

There will be three classes per week following NSU Academic Calendar. Three classes in each week will be completed with two meetings. Each class meeting will be for 90 minutes.

Contents Overview:

The course material is divided into seven units where each unit consists of a series of learning activities including attending classes, reading from class notes and textbook, programming practices, and completion of works for evaluation.

Unit	Topic(s)	Week(s)	Related Works
1	Language Design Criteria	2	Quiz 1, 2 Assignment 1, 2
2	Functional Programming	2	
3	Logic Programming	2	
			Mid Exam
4	Syntax and Basic Semantics	2	Quiz 3, 4 Assignment 3
5	Object Oriented Programming	2	
6	Modern Programming Languages	1	
7	Parallel Programming	1	
			Final Exam

Assessment Scheme:

Assessment Tools	Weightage (%)
Class Performance	10%
Quizzes (best 3)	15%
Assignments	15%
Midterm	30%
Final Exam	30%
Total	**100%**

Class performance: Asking questions, taking part in discussions, and so on.

Exams and Quizzes: Exams and quizzes will be closed book and closed notes. No electronic devices except non-programmable calculators will be allowed during exams. Calculators cannot be shared with friends. **There will be no makeup quizzes or exams.** If you miss a quiz or exam, you will get zero for that. Final exam will be comprehensive.

Assignments: There will be several home works/ assignments throughout the semester **No late submission will be accepted.** To be successful in the exam, you should solve assignment

problems independently, although you may discuss with your friends to understand a more comprehensive picture of the problems.

Grading Scheme

Scores (in %)	Letter Grade	Grade Points
93 & above	A Excellent	4.0
90 to <93	A-	3.7
87 to <90	B+	3.3
83 to <87	B Good	3.0
80 to <83	B-	2.7
77 to <80	C+	2.3
73 to <77	C Average	2.0
70 to <73	C-	1.7
67 to <70	D+	1.3
60 to <67	D Poor	1.0
00 to <60	F*	0.0
	I** Incomplete	0.0
	W** Withdrawal	0.0
	R** Retaken	0.0

Class etiquette: Distracting others in class is violating others rights to be attentive. **So, laptop, tablets, cell phones or any other devices cannot be turned on during class time.** You have to share any talk with the whole class. Attendance will be counted at the beginning of the class and if you are late then **no late attendance will be counted.**

Grade dispute: If you dispute your grade on any homework, quiz or exam, you have one-week time (from the date that the graded paper was returned to you) to request a change in the grade. After this time, no further change in grade will be considered.

Academic dishonesty: Any means of unauthorized assistance in preparing materials, which a student submits as own work, is deemed to be cheating and constitutes grounds for disciplinary action. Instructors are expected to use reasonably practical means of preventing and detecting cheating. Any student judged to have engaged in cheating might receive a reduced grade for the work in question, a failing grade in the course, or such other lesser penalty, as the instructor deems appropriate. Serious instances may be referred to the Disciplinary Committee of NSU.