جامعة الخليج للعلوم والتكنولوجيا GUST SINCE 2002 Gulf University For Science & Technology

Department of Computer Science

CSC 325 Concepts of Programming Languages

(3 contact hours – 0 lab hour - 3 credits)

Syllabus[1]

- **General Information**

Instructor	
Office	
Phone	
Class Time	
Class Location	
Office Hours	
Teaching Assistant	

- **Required Textbook**
  - ***Concepts of Programming Languages: International Edition,*** *ninth Edition, Robert W. Sebesta, University of Colorado, Colorado Springs publisher: Pearson Higher Education.*

- **Supplementary Textbook**

  - **Programming Languages, Principles and Paradigms,** *Second Edition, Allen B Tucker, BOWDOIN COLLEGE, Robert Noonan, College of William and Mary.*

- **Course Description**

  Principles of programming language design. Specification of syntax and semantics. Underlying implementation of block structured languages. Dynamic memory allocation for strings, lists, and arrays. Imperative versus applicative programming. First order logic and logic programming. Lambda calculus and functional programming languages. Modern programming languages.

- **Course Prerequisites**

  CSC 226 (Object Oriented Programming)

- **Course Category**

  Required

[1] **This syllabus may change as needed. In such a case, students will be informed accordingly**

- **Course Outcomes:**

  At the completion of this course, students will be able to:

  1. Explain the language features and paradigms of different programming languages and understand first order logic and lambda calculus. [ABET a]
  2. Describe syntax, semantics, names, scopes and bindings. [ABET a]
  3. Describe control flow, data types and execution of programming languages. [ABET a]
  4. Determine appropriate languages for given applications. [ABET b]
  5. Apply programming languages effectively. [ABET c, i]
  6. Recognize the importance of life-long learning by engaging in self-learning activities for new programming languages and paradigms. [ABET h]

- **Tentative Schedule**

Topic	Week
Ch1 & Ch2 : Preliminaries & Background	1
Ch3 : Syntax	2-3-4
Ch5 : Names, Bindings, and Scopes	5-6
Ch6 : Data Types	7-8
Ch7 & Ch8 : Semantics	9
Ch9 & CH10: Functions	10-11
Ch15 : Functional Programming	12-13
Ch16 : First Order Logic and Logic Programming	14-15

- **Grading Scheme**

Report	**15%**
Home Work Assignments	**15%**
Midterm Exam	**30%**
Final Exam	**40%**
Total	**100%**