CS 355 - Principles of Programming Languages

SYLLABUS

Course Readings

COURSE READINGS

Digital Book Shelf

The *book shelf* has a number of out-of-copy write text books for you to reference. You are free to use them as you see fit and use them you should. If a topic is introduced, currying for example and you are unsure of my presentation, search the provided texts and see if you can find a better explanation.

Course Description

COURSE DESCRIPTION

This course investigates the languages that we use to write programs. The purpose of this course is not to provide you with programming proficiency in a half-dozen or more languages. Although we will look at and write in many languages, you may not learn any of them in enough detail to do "real programming" beyond selected projects in specific languages. Instead, you will learn the elements that make up programming languages, the rationale behind language design choices, and the way in which different language elements interact. Upon completing this course, you should be able to learn new languages on your own. In fact, you should never need to take another course just to learn an unfamiliar language. Evaluate the suitability of a language to a particular project. Anticipate the changes that are likely to take place in programming languages over the next several years.

Goals and Objectives

GOALS AND OBJECTIVES

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

1. Classify and identify the four major categories of languages: Logical, scripting, functional, object oriented, hybrid types

2. Describe and apply the categories of syntax and semantics, including formal methods of syntax, attribute grammars, and static and dynamic semantics

3. Demonstrate lexical and syntactical analysis

4. Demonstrate general knowledge in naming, binding, type checking, and scoping

5. Elaborate the theory of data types, expressions and assignment statements

How the Course Works

HOW THE COURSE WORKS
This online course employs several methods of delivery and learning activities including online lectures and presentations, threaded discussions, Web sites, video clips, reading and written assignments, self-assessment checks, examinations, e-mail, and electronic access of information.

**Grading Criteria**

**GRADING CRITERIA**

There are **three primary programming projects**, one in SML, one in SwiProlog and the third in an Open-Source Scripting language. There are a number of ungraded activities (self-assessments) in each of the modules that you should use to judge your own progress. Substantial sample codes are provided in each project language. In addition, there is a **written final exam** that covers the concepts presented in the course, not necessarily the syntax and grammar of the example languages. The **3 projects** and the **final exam** count equally (**100 points each**) in grade determination. Late work will be assessed a 15% penalty per day each day for 3 days after that the work will receive a mark of 0.

A letter grade will be assigned to each student based on a cumulative score, which will be translated into a conventional percentage. Percentages translate into letter grades as follows:

<table>
<thead>
<tr>
<th>Final Percentage</th>
<th>Letter Grade</th>
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<tbody>
<tr>
<td>92-100</td>
<td>A</td>
</tr>
<tr>
<td>90-91</td>
<td>A-</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
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<td>84-86</td>
<td>B</td>
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<td>80-83</td>
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<td>77-79</td>
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<td>74-76</td>
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<td>64-66</td>
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<tr>
<td>60-63</td>
<td>D-</td>
</tr>
<tr>
<td>&lt;59.9</td>
<td>F</td>
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</tbody>
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**Student Responsibilities**

**STUDENT RESPONSIBILITIES**

By attending Old Dominion University you have accepted the responsibility to abide by this code: I pledge to support the honor system of Old Dominion University. I will refrain from any form of academic dishonesty or deception, such as cheating or plagiarism. I am aware that as a member of the academic community, it is my responsibility to turn in all suspected violators of the honor system. I will report to Honor Council hearings if summoned. I do not tolerate academic dishonesty at any level and such conduct will result a substantial penalty for all parties involved.

**Time Management**

Students are expected to spend 10 hours per week on the course materials and assignments. Out of 10 hours, students are expected to spend approximately 3 hours per week to read the material and another 3 hours/week for the homework and discussions.
Attendance

Since this is an on-line course, there is no mandatory attendance policy. However, students are expected to actively participate in the discussions, homework submissions, and journal writing. Each of these components is graded and counted toward the final grade.

Course Policies

COURSE POLICIES

Online Classroom Conduct (Netiquette)

Students are expected to follow good Netiquette rules. Netiquette is the accepted behavior for online participation. The following is a list of general guidelines for this course:

- Check your grammar and spelling
- Keep your comments focused on the topic
- Strive to write succinctly and clearly
- Share your knowledge and include supportive evidence for your comments
- Do not use all capital letters as that is viewed as shouting
- Avoid flaming—disrespectful language is unacceptable

Select the link to find more information on Netiquette.

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Tests and Make-ups

If a situation has occurred that requires your time and attention which will prevent submitting your work on time, please notify your instructor 24 hours before the scheduled due date.

Course Disclaimer

Every attempt is made to provide a syllabus that is complete and that provides an accurate overview of the course. However, circumstances and events may make it necessary for the instructor to modify the syllabus during the semester. This may depend, in part, on the progress, needs, and experiences of the students.

University Policies

UNIVERSITY POLICIES

ODU Honor Code

The Old Dominion Honor Code is very important. Please obey all rules and regulations. Please do not be afraid to assist and learn from each other. But you must have personally written ALL code submitted for evaluation. Sophisticated software will be used to check for "borrowed" code. All students are expected to use standard security protocols on their university directories.
Special Needs

Old Dominion University is committed to achieving equal educational opportunity and full participation for persons with disabilities. It is the university's policy that no qualified person be excluded from participation in any university program or activity, be denied the benefits of any university program or activity, or otherwise be subjected to discrimination with regard to any university program or activity. This policy derives from the university's commitment to Non-discrimination for all persons in employment, access to facilities, student programs, activities and services. For additional information visit the Office of Educational Accessibility online or at 1525 Webb Center.

Disability Services.

In compliance with PL94-142 and more recent federal legislation affirming the rights of disabled individuals, provisions will be made for students with special needs on an individual basis. The student must have been identified as special needs by the university and an appropriate letter must be provided to the course instructor. Provision will be made based upon written guidelines from the University's Office of Educational Accessibility. All students are expected to fulfill all course requirements.

University Email Policy

The Old Dominion University e-mail system is the official electronic mail system for distributing course-related Communications, policies, Announcements and other information. In addition, the University e-mail user ID and password are necessary for authentication and access to numerous electronic resources (online courses, faculty Web pages, etc.)

Withdrawal

A syllabus constitutes an agreement between the student and the course instructor about course requirements. Participation in this course indicates your acceptance of its teaching focus, requirements, and policies. Please review the syllabus and the course requirements as soon as possible. If you believe that the nature of this course does not meet your interests, needs or expectations, if you are not prepared for the amount of work involved - or if you anticipate that the class meetings, assignment deadlines or abiding by the course policies will constitute an unacceptable hardship for you - you should drop the class by the drop/add deadline, which is located in the ODU Schedule of Classes. For more information, please visit the Office of the Registrar.