San José State University
Department of Computer Science
CS152, Programming Paradigms, 5, Fall, 2016

Course and Contact Information

Instructor: Thaddeus Aid

Office Location: DH282

Email: Thaddeus.aid@sjsu.edu

Office Hours: Saturday - 16:00-17:00

Class Days/Time: Saturday – 13:00 – 15:45

Classroom: MQ225

Course Format

Technology Intensive, Hybrid, and Online Courses

You will need access to a computer for programming assignments and an internet connection to hand in assignments on Canvas.

Faculty Web Page

Http://www.cs.sjsu.edu/~aid

Course Description

Programming language syntax and semantics. Data types and type checking. Scope, bindings, and environments. Functional and logic programming paradigms, and comparison to other paradigms. Extensive coverage of a functional language.

Upon successful completion of this course, students will be able to:

1. CLO 1 Have a basic knowledge of the history of programming languages.
2. CLO 2 Have a basic knowledge of the procedural, object-oriented, functional, and logic programming paradigms.
3. CLO 3 Understand the roles of interpreters, compilers, and virtual machines.
4. CLO 4 Critique the design of a programming language.
5. CLO 5 Read and produce context-free grammars.
6. CLO 6 Write recursive-descent parsers for simple languages, by hand or with a parser generator.
7. CLO 7 Understand variable scoping and lifetimes.
8. CLO 8 Write interpreters for simple languages that involve arithmetic expressions, bindings of values to names, and function calls.
9. CLO 9 Understand type systems.
10. CLO 10 Understand the implementation of procedure calls and stack frames.
11. CLO 11 Produce programs in a functional programming language in excess of 200 LOC

Required Texts

Textbook

No required text books. Online resources will be provided

Course Requirements and Assignments

The course is 50% coursework:
10 points – Initial Essay on the Four Main Paradigms
20 points – Investigation into Algorithms in the Four Main Paradigms
20 points – Producing a PEMDAS REPL in Clojure

The course is 50% exam:
20 points – Midterm
30 points - Final

Final Examination or Evaluation

30 points (30% of your grade)
2 hours 15 minutes
The class helps to guide the content of the exam

Grading Information

Determination of Grades

Grading:

50% Coursework
20% Midterm
30% Final

Final Grades:
90% or higher A
80-89% B
70-79% C
60-69% D
59% or lower F

If the unit digit is 7-9 [Letter]+
If the unit digit is 0-2 [Letter] –

Example 82% would be B-

Classroom Protocol

I expect people to be on time, no cell phones, and to generally be active in the classroom discussions.

If you miss a class you are expected to review the lecture notes and catch up with classmates.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/"

Course Number / Title, Semester, Course Schedule

Lecture topics are subject to change based on need, where available as much advanced warning will be provided via email.

Course Schedule

Week	Date	Topics, Readings, Assignments, Deadlines
1	08/27/2016	History of computers and programming
1	08/27/2016	Introduction to Programming Paradigms
2	09/03/2016	Procedural Programming
2	09/03/2016	Object Oriented Programming
3	09/10/2016	Functional Programming
3	09/10/2016	Introduction to Clojure
4	09/17/2016	Logic Programming
4	09/17/2016	Introduction to Prolog
5	09/24/2016	Interpreters, Compilers, and Virtual Machines
5	09/24/2016	Interpreters, Compilers, and Virtual Machines (cont)
6	10/01/2016	Context Free Grammars
6	10/01/2016	Context Free Grammars (cont) Homework 1 due 09/30/2016 before 23:59
7	10/08//2016	Data Types
7	10/08//2016	Mutability
8	10/15//2016	Review for Mid Term
8	10/15/2016	Review for Mid Term
9	10/22/2016	Mid Term
9	10/22/2016	Mid Term
10	10/29/2016	Static vs Dynamic programming
10	10/29/2016	Compilation/Intrepreation vs REPL Homework 2 due 10/28/2016 before 23:59
11	11/05/2016	Interpreting Commands
11	11/05/2016	Interpreting Commands (cont.)

Week	Date	Topics, Readings, Assignments, Deadlines
12	11/12/2016	Interprocess Communication
12	11/12/2016	Intersystem Communication
13	11/19/2016	Parallel and Concurrent Programming
13	11/19/2016	Parallel and Concurrent Programming (cont)
14	11/26/2016	Thanksgiving Break!
14	11/26/2016	Thanksgiving Break!
15	12/03/2016	TDB – This lecture intentionally left blank to allow for targeted needs
15	12/03/2016	TDB – This lecture intentionally left blank to allow for targeted needs Homework 3 due on 12/02/2016 before 23:59
16	12/10/2016	Review for Final
Final Exam	12/17/2016	Normal class room/time