

Course Title: **Survey of Educational Computer Languages**
(3 credit hours)

Instructor: Dr. Greg Jones

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Office Hours: Wed 3-6pm,
Thur 3-6pm (on class nights),
or by appointment.

Contacting the Instructor:

E-mail is the best method to contact me, since I check my e-mail multiple times daily. Students may use my cell phone number to contact me outside office hours. Please use appropriate discretion at what times you call.

Pre-Requisite: CECS 5020 (Computers in Education) or equivalent

Course Description:

A study of beginning computer programming using JavaScript, Perl, and HTML. Requires "hands-on" programming independent of classroom instruction. Topics include variables, simple and complex data structures, object-oriented design, debugging, and language uses.

Textbooks: JavaScript Sourcebook
Gordon McComb
ISBN: 0471161853
Publisher: Wiley, John & Sons, Incorporated

Programming Perl-3rd ed.
Larry Wall, Mike Loukides (Editor)
ISBN: 0596000278
Publisher: O'Reilly & Associates, Incorporated

Optional: CGI Programming with Perl-2nd ed.
Shishir Gundavaram, Gunther Birznieks
ISBN: 1565924193
Publisher: O'Reilly & Associates, Incorporated

Course Requirements:

There will be assigned homework problems. Programming projects will require the students to spend time at the computer. To plan a minimum of six to nine hours a week of outside preparation is a safe time allocation for successfully completing this course.

Course Topics and Objectives:

Demonstrate application of appropriate programming constructs for branching and looping in the target language.

Demonstrate the construction of a modular program through application of classes, subprograms, and functions, as appropriate for the target language.

Select from among character, Boolean, integer, and floating-point data types the most appropriate data representation for a variety of data representations.

Manipulate textual string data using language/library functions for insertion, deletion, copying, and concatenation.

Demonstrate the use of message-passing/event-driven programming techniques in the construction of a program.

Demonstrate the use of debugging techniques in the creation of error-free programs.

Describe the role of the target language in the education or training environment.

Demonstrate the construction of a graphical user interface including menus, buttons, and fields with a visual development tool.

Use structured data types, including arrays, to appropriately represent structured data.

Method of Presentation and Evaluation:

The class lectures will cover the assigned reading materials. Selected sample programs and assigned homework programs will also be discussed in class. There will be a midterm exam and a final term project during the semester. Points will be awarded for tests, homework, and the final project as described below.

Exam	1 @ 20 points each	20
Homework	4 @ 10 points each	40
Final Project		40

Total 100

Late homework will lose 3 points each week it is late. Any assignments not turned in by the last class meeting will be assigned a grade of zero, unless the student has made prior arrangements with the instructor.

Homework that fails to function will be assigned a grade of 0. Homework that does function but that outputs incorrect answers for the given data set or does not meet the specification of the assignment will receive 50% of the assignment points.

Students may elect to correct homework and resubmit for a re-grade. A student may resubmit work two times. Resubmitted homework when corrected and functional will count 80% of the original points.

Students are **encouraged** to carefully check the logic and the output of their programs before submitting them for review and grading.

Homework:

Homework will result in on-line programs. More information will be provided during the course as to when and how the instructor will grade the homework.

Final Project:

Each student will develop and submit a semester project for this course. The student will specify a target audience and instructional objective(s) to be met through the use of programming methods discussed and demonstrated in the course. The final project must incorporate both client (javascript) and server side (perl) programming. After proposal approval by the instructor, the student will implement the program for their final project. The final project will be graded on whether it meets the objective(s) and target audience, the programs look, feel, and function, operates correctly, and program documentation.

Class Listserv:

Send an email to the instructor from the email address you would like to have on the class discussion list.

Grading Scale

Letter grades will be the higher grade resulting from the following two standards:

≥ 90	A	Top 10%	A
$\geq 80 < 90$	B	Next 20%	B
$\geq 70 < 80$	C	Next 40%	C
$\geq 60 < 70$	D	Next 20%	D
≤ 59	F	Last 10%	F

Class Attendance:

Attendance and punctuality are professional behaviors expected of educators. Educational or Instructional technology is not "doing computer projects" – it is much more. Hence, you need to be in class for discussions and learning activities.

Due dates, for all assigned materials, will be announced in advance. Changes, on the assignment's requirements or due dates may be announced at later dates, in class, therefore attendance to all classes is necessary. It is the student's responsibility to keep up with these updates and to have all assignments ready on time. Any student, who has to be absent on an assignment's due date, may arrange to have the assignment submitted early.

You must notify your instructor **in advance** if any exam is to be missed. If an exam is missed without prior notification, 20% will automatically be deducted from the exam grade. Make-up exams must be taken outside of regularly scheduled class time. Any missed exam must be made up within one week of the scheduled time. Date and time to be determined by the instructor upon student request.

Server Space:

You will be provided with server space. Information on how to access the space will be provided when available. You may develop programs on whatever system you choose, but all assignments and final/term project will only be graded when they reside on the agreed upon server space. (TBA)

Academic Ethics:

Students are expected to create and edit their own assignments and take tests without outside assistance. This is a programming class and it is acceptable to ask for help from others after you have put forth significant effort to debug written code that is not working correctly and when testing your software. However, asking for help in debugging does not mean you have someone rewrite your code. **All work is expected to be your own.**

Cheating and disciplinary action for cheating is defined by the UNT Policy Manual Code for Student Conduct and Discipline. Cheating is an act of academic dishonesty. It is defined and is to be handled as follows:

“Plagiarism and cheating refer to the use of unauthorized books, notes, or otherwise securing help in a test; copying tests, assignments, reports, or term papers; representing the work of another as one's own; collaborating without authority, with another student during an examination or in preparing academic work; or otherwise practicing scholastic dishonesty.”

Although there are other possibilities, you should expect that the penalty that will be assigned for such infractions will include a failing grade in the course and a recommendation that you be denied a degree. You are expected to conform to all policies of the University of North Texas and work within the honor code.

As defined by the United States Copyright Act, it is your responsibility to clearly identify all elements in your work that are not “original works of authorship.” You are expected to strictly obey the provisions of all laws of the United States and the State of Texas in the completion of all course activities, taking particular notice of the provisions of the United States Copyright Act (Title 17 United States Code). This law provides that you may legally use, within certain limitations, certain copyrighted materials in the context of research and scholarship. Do not confuse your ability to legally copy materials under the “fair use” provisions of the Copyright Act with the ability to claim that such a copy is an original work of authorship.

For more information on academic dishonesty, please refer to your current student catalog.

Americans with Disabilities Act Compliance:

The Department of Technology and Cognition complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. This university will adhere to all applicable Federal, State, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to contact the faculty member outside of class to make any arrangements involving special accommodations and/or the Department ADA Representatives: Dr. Bertina Hildreth and Dr. Cathie Norris. Their offices are in Matt 316. You may schedule an appointment by call (940) 565-2057.

EEO/ADA on Discrimination:

The University of North Texas does not discriminate on the basis of race, color, religion, sex, age, national origin, disability or disabled veteran status in its educational programs, activities, admissions, or employment policies. In addition to complying with federal and state equal opportunity laws and regulations, the university through its diversity policy declares harassment based on individual differences (including sexual orientation) inconsistent with its mission and educational goals. Direct questions or concerns to the equal opportunity office, (940) 565-2456, or the dean of students, (940) 565-2648. TDD access is available through Relay Texas: (800) 735-2989.

For more information on EEO/ADA, please refer to your current student catalog.

Tentative Course Schedule (as of Aug 27, 2002)

Abbreviations

JS = JavaScript Source Book
PP = Programming Perl
CGIP = CGI Programming (optional)

Aug 29 (Sept 5)

Reading:

JS Chapters 1, 2, 3, 4, 5

Note: Starting at Chapter 12 the book is a reference.
The reference section is very useful.

Course Review

Introduction to Programming and Programming Languages
Software Life Cycle and Development
Overview of JavaScript, PERL, and HTML

NoteTabPro – Syntax Editors
JavaScript – Part 1

Sept 12 (Sept 19)

Homework Assignment 1 Due (Javascript)

Reading:

JS Chapters 6, 7, 8, 9, 10, 11

Variables, Data Structures, Expressions, Logic Statements,
Program Flow Control, Events, Functions
Creating Modular Programs
Basic Debugging and Debugging JavaScript
JavaScript – Part 2

Sept 26 (Oct 3)

Homework Assignment 2 Due (JavaScript)

Reading:

PP Chapters 1, 2

Design of Graphical User Interfaces

Introduction to PERL
PERL – Part 1
Debugging PERL

Oct 10 (Oct 17)

Reading:

PP Chapter 3, 4, 5

CGIP Chapters 1, 2, 3, 4, 5 (optional)

Choosing the right programming language
Object Orientated Programming (OOP)

PERL – Part 2

The power of strings (text manipulation)

Creating cgi scripts and passing web information back and forth.

Oct 24 (Oct 31)

Homework Assignment 3 Due (Perl)

Project Proposals Due

Reading:

CGIP Chapter 7, 9, 10 (optional)

PERL – Part 2

Integrating PERL and JavaScript into a project

Review before Exam

Exam

Nov 7 (Nov 14)

Homework Assignment 4 Due (Integration of Javascript/Perl)

Discussion of Final Project

The Software Design Document

Creating interactive client/server software systems

Review before test

Test #2 (PERL and passing data)

Nov 21 (Nov 28)

The role of programming languages in the
education or training environment.
Managing Software Development
Advance Topic (TBD)
Class Presentation of Final Projects

Dec 5

Class Presentation of Final Projects

Project Due

Dec 12

No Class Meeting
Last day to turn in late assignments (3pm)