Professor: Dr. Zhijiang Dong  
Office: KOM 355  
Phone: 615-904-8428  
Email: Zhijiang.Dong@mtsu.edu

Office Hours:  
Monday & Wednesday: 9:30 – 12:00  
Other times by appointment

Course Information:

Requirement textbook:  
Compiler Construction: Principles and Practice by Kenneth Louden.

Reference book:  
- Compilers: Principles, Techniques, & Tools (2nd edition) by Alfred Aho etc.  
- Modern Compiler Implementation in Java by Andrew Appel

Course webpage: [http://www.cs.mtsu.edu/~zdong/4160](http://www.cs.mtsu.edu/~zdong/4160)

Covered concepts: The various phases of a compiler along with grammars, finite automata, regular expressions, LR parsing, error recovery, and other related materials. A term project consisting of the design and construction of a functional compiler required.

Learning outcomes: Upon successful completion of this course, a student will be able to  
- develop an understanding of how to work in teams,  
- develop an understanding how one can work on a project so large and complicated that one can't possibly fully understand the complete project (at the beginning) and in return how important design, debugging, and proper documentation are to a project,  
- develop an understanding of how to analyse and design large projects,  
- develop an understanding of compiler techniques (the theory),  
- develop an understanding of how valuable software tools and libraries are to a project.

Course Assignments

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Projects (6-7)</td>
<td>50%</td>
</tr>
<tr>
<td>Midterm Exams (3)</td>
<td>30% (10% each)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
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</tbody>
</table>
Project
The course has a term-long project to develop an interpreter for a simple programming language. The term-long project is divided into several smaller projects. A project may depend on your work in the previous one.

Each project is designed for solving problems assigned without direct teacher supervision. You will go to the lab at your own convenience and solve the assigned problem at your own pace.

Programs are graded based upon design, correctness, documentation, style, efficiency, elegance, and adherence to requirements. You must design, write, implement, and debug your own programs. You may discuss with others high level details of program design and implementation. However, following situations are not allowed and will be treated as cheating:

- Show to or acquire from other students any materials related with assignment solutions such as source code and documentation, no matter with intention or not, no matter in which form these materials are presented.
- Help or seeking help from other students to debug programs. However, you may get help from lab assistant or instructor.
- Copy, or refer to source code from internet, other students' homework or other source (excludes textbook or materials provided by instructor), no matter with citation or not. All source code must be original.

Grading scale
Letter grades will be determined using a standard percentage point evaluation as outlined below.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>90% - 100%</td>
</tr>
<tr>
<td>B+</td>
<td>85% - 89%</td>
</tr>
<tr>
<td>B</td>
<td>80% - 84%</td>
</tr>
<tr>
<td>C+</td>
<td>75% - 79%</td>
</tr>
<tr>
<td>C</td>
<td>70% - 74%</td>
</tr>
<tr>
<td>D+</td>
<td>65% - 69%</td>
</tr>
<tr>
<td>D</td>
<td>60% - 64%</td>
</tr>
<tr>
<td>F</td>
<td>0% - 59%</td>
</tr>
</tbody>
</table>

Your final grades will be calculated based on the above tables with the following exceptions:

- The project grade cannot raise the test grade of all exams more than two levels. For example, if your test grade is C, then the highest final letter grade you can get is B (i.e. C -> C+ -> B).
- You final letter grade of the course cannot be C or above if one of the following occurs:
  - the average of all mid-term exams is a F,
  - the final exam score is a F,
  - the project average is a F, or
  - a grade of zero on two or more projects.

Class Policies

Cell Phone: Please silence all cell phones and beepers. If the lecture is interrupted by a cell phone or beeper, the student will answer a question later in the class.
**Attendance:** Attendance is expected and absences do not excuse one from class responsibilities. If for some unavoidable reason you must miss class, obtain class notes, handouts, and assignments from another class member or course webpage. Students can earn up to **2 bonus points** if they will take the final exam and are "active" enough, i.e. asking and answering questions in the class.

**Exams:** Examinations must be taken at the published times. No make-up exams will be offered unless there is an unavoidable extenuating circumstance (at the discretion of the instructor).

**Grade:** It is guaranteed that you will get at least 20% points for any homework or project you submit. Each homework/project has ONE deadline only. No submission will be accepted after the deadline.

**Final Exam:** Students can opt out the final exam if he or she get 80% or above on EVERY homework, project, and exam. His or her final grades will be the letter grade provided by instructor based on his or her performance.

**Zero Tolerance of Academic Misconduct:** The class has a zero tolerance policy of academic misconduct. Academic misconduct includes cheating, plagiarizing, research misconduct, misrepresenting one’s work, and inappropriately collaborating. This applies to any work students turn in for evaluation or course credit. Definitions can be found at: [http://www.mtsu.edu/~csdept/Academics/academicIntegrity.htm](http://www.mtsu.edu/~csdept/Academics/academicIntegrity.htm). If a student is found responsible for committing an act of academic misconduct, he/she will get **F on this course** and will be reported to the university. If you are working on a lab machine, make sure your work is stored under your personal account so that other students cannot access it.

**University Policies**

**Lottery Scholarship:** Do you have a lottery scholarship? To retain the Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. A grade of C, D, F, FA, or I in this class may negatively impact TELS eligibility.

If you drop this class, withdraw, or if you stop attending this class you may lose eligibility for your lottery scholarship, and you will not be able to regain eligibility at a later time.

For additional Lottery rules, please refer to your Lottery Statement of Understanding form ([http://www.mtsu.edu/financial-aid/forms/LOTFEV.pdf](http://www.mtsu.edu/financial-aid/forms/LOTFEV.pdf)) or contact your MT One Stop Enrollment Coordinator ([http://www.mtsu.edu/one-stop/counselor.php](http://www.mtsu.edu/one-stop/counselor.php)).

**Academic Misconduct:** It is expected that all work for this class (including exams, homework and open labs) is your own. The university policy for academic misconduct will be followed. Academic misconduct includes the following behaviors:

- **Plagiarism.** The adoption or reproduction of ideas, words, statements, images, or works of another person as one's own without proper acknowledgement.
- **Cheating.** Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. The term academic exercise includes all forms of work submitted for credit or hours.
- **Fabrication.** Unauthorized falsification or invention of any information or citation in an academic exercise.
• Facilitation. Helping or attempting to help another to violate a provision of the institution code of academic misconduct.
For more information, please refer to the following links:
http://www.mtsu.edu/~csdept/Academics/academicIntegrity.htm

Unofficial Withdrawals: Federal regulations require that students who cease class attendance but do not officially withdraw from the University must be reported so that future financial aid will cease and/or the student will be required to return funds. Therefore, during the term I will be required to complete a roster indicating those students who have stopped attending class without officially withdrawing. Faculty members are not required to check attendance each day; however, you may use project submission deadlines, exams, quizzes, advising appointments, or other methods I choose may be used to determine unofficial withdrawals.

Student with Disabilities: Students with documented disabilities are entitled to reasonable accommodations if needed. If you believe you need accommodations, please see me and the Office of Disabled Student Services (898-2783). No accommodations will be made unless verified by the Office of Disabled Student Services. For more information about the office, please check their website: http://www.mtsu.edu/dssemail/.

Title IX Statements: MTSU faculty are concerned about the well-being and development of our students and are legally obligated to share reports of sexual assault, dating violence, domestic violence and stalking with the University’s Title IX coordinator to help ensure student’s safety and welfare. Please refer to MTSU’s Title IX site for contact information and details. http://www.mtsu.edu/titleix/.

This syllabus represents a general plan for the course and deviations from this plan may be necessary during the duration of the course. I reserve the right to modify course policies, the course calendar, assignment point values, and due dates.