

# COSC 5315-01 Foundations of Computer Science

## Fall 2017

Instructor: *Kami Makki, Ph.D.*

Office: Maes 074

Phone: 409-880-8783

Email: [kami.makki@lamar.edu](mailto:kami.makki@lamar.edu)

Office Hours:

Tue/Thu 2:10 - 3:10

(Or by appointment)

### Course description:

The foundations of computer science are studied in order to give a better understanding of the discipline. Topics include: logic, computational models, formal languages, computability and complexity theory.

### Student learning outcomes:

Student who successfully completes the course will be able to:

- Demonstrate basic understanding of the measures for separating what computers can do from what they cannot do.
- Demonstrate familiarity with the hierarchical classifications and closure properties of various grammars, languages, and accepting machines.
- Demonstrate familiarity with the equivalences among grammars, languages and accepting machines.
- Demonstrate understanding of the differences and equivalences between determinism and non-determinism of various computing models, and grasp thorough understanding of predicate logic and computational complexity.

### Prerequisites:

- None (however, expected to have basic knowledge of programming with high and low level programming languages and graph theory).

### Required textbook:

- **An Introduction to Formal Languages and Automata, 6<sup>th</sup> Edition**, by Peter Linz, ISBN-13: 9781284077247, Publisher Jones & Bartlett, 2017.

### Reference textbook (Optional):

- **Automata Theory, Languages, and Computation, 3rd Edition**, by John E. Hopcroft and Jeffrey D. Ullman, Addison Wesley, 2007.
- **Automata, Computability, and Complexity: Theory and Applications**, by Elaine Rich, Prentice Hall, 2008

### Assignments & Teaching Strategies:

- There will be a number of homework assignments.
- These assignments must be turned in on time and expected to be submitted on time the date that they are due. Partial marking will be allocated to incomplete assignment, and there will be a reduction of grade for late (less than 2 days) submissions with the following penalties: 10% for 1

hour to 24 hours late, and 20% for 24 hours to 48 hours late. No assignment will be accepted 48 hours after the due time.

- All the course materials will be placed online at the blackboard website. Furthermore, assignment submissions and assignment grade reporting will take place online.

**Exams:**

- There will be one mid-term exam and one final exam.
- No makeup exams are given. A student missing an exam due to an excused absence may have the grading weights adjusted, placing more weight in other categories. Whether an absence is “excused” or not is determined by the instructor. Documentation of a valid excuse is required.
- The exams are comprehensive in nature. This is because much of the materials taught at the end of the semester depend heavily on the materials taught at the beginning. However, each exam will focus more on the materials covered since the last exam. This does not mean that there will be no questions focused on “old” materials.

**Grading:**

- the numerical grades will be based on the following:  
    Assignments: 20%  
    Active Course Participation: 10%  
    Exam: 70% (Mid Exam: 30%, Final Exam: 40%)
- The letter grade will be determined by the numerical grades as follows:

COSC 5315	Grade
90%-100%	A
80%-89.9%	B
70%-79.9%	C
60%-69.9%	D
0-59.9%	F

- Students wishing to withdraw from the course may do so up to the withdrawal deadline (this is a student initiated action and must be done by the student). All students not withdrawing by this deadline are assumed to be enrolled in this class through to completion. If a student is failing or wishes to drop for another reason it is the student’s responsibility to do so by the deadline.
- No curve is guaranteed. However, if a curve is justified to be used at the end of the semester, then it will be applied to your final average.
- The letter grade will be determined by the numerical grades as follows:

**Programming assignments:**

- Assignments will be submitted using the Blackboard submission process.

**What to turn in:**

1. Your submission should include your name, student id, and program number.
2. Make a zip file of your source and data files.

**Email and Discussions:**

- Adhere to the same standards of behavior online that you follow in real life when writing emails or posting on the discussion board.

**Academic Continuity Plan:**

In the event of an announced campus closure in excess of four days due to a hurricane or other disaster, students are expected to login to Lamar University's website's homepage for instructions about continuing course remotely.

**Academic Honesty:**

Students are specifically warned against all forms of cheating and plagiarism. Lamar University expects all students to engage in all academic pursuits in a manner that is above reproach. The Lamar University Student Handbook clearly reads: "Any student found guilty of academic dishonesty in any phase of academic work will be subjected to disciplinary action". Punishable offenses include, but are not limited to, cheating on an examination or academic work which is to be submitted, plagiarism, collusion, and the abuse of source materials.

**Plagiarism:**

Plagiarism is defined as "the appropriation and the unacknowledged incorporation of another's work or ideas into one's own and submitted for credit".

**Collusion:**

Collusion is defined as "the unauthorized collaboration with another person in preparing work offered for credit".

**"Cheating" includes:**

1. Copying from another student's paper, report, computer files, data listings, and/or programs.
2. Using (during an exam), materials not authorized by the faculty giving the exam.
3. Collaborating, without authorization, with another person during an examination or in preparing academic work.
4. Knowingly, and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing in whole or part, the contents of an un-administered test. Substituting for another student; permitting any other person; or otherwise assisting any other person to substitute for oneself or for another student in the taking of an examination or the preparation of academic work to be submitted for academic credit.
5. Bribing another person to obtain an un-administered exam or information about an un-administered exam.
6. Purchasing, or otherwise acquiring and submitting as one's own work any research paper or other writing assignment prepared by an individual or firm. This section does not apply to the typing of the rough and/or final versions of an assignment by a professional typist.
7. Any copying from library or other resources, including the Internet/WWW, without the instructor's prior knowledge and approval, or without giving (clearly and conspicuously) the proper credit reference.

While studying together is encouraged, all work in this course must be your own and violation of academic integrity is not acceptable. Faculty members in the College of Arts and Sciences investigate all cases of suspected academic dishonesty. Therefore, anyone caught cheating or plagiarizing on a homework assignment (including copying of whole program or portions of a program) or quiz or exam will get a zero on that homework or quiz or exam. Any student caught cheating or plagiarizing on the final exam or the project will get an F in the course. Also, anyone caught cheating or plagiarizing on more than one occasion will get an F in the course. The same applies to those who allow their materials to be copied.

**Course Attendance Policy:**

- This is a **Hybrid/Online course** and it is essential that students login to Blackboard regularly to check course announcement and participate in assigned learning activities and finish all the required course work (assignments) based on the course schedule available on blackboard in time. Poor course participation will ultimately be reflected in the course grade. Therefore, an “A” student must read and submit assignments for all classes in time and actively engage with the course.
- It is the student’s responsibility to make sure that she/he is officially enrolled in this course. If at any point, you decide to drop this course, it is your responsibility to officially drop the course. Any student who stops actively participating in the course (e.g. does not login to check the course materials on Blackboard regularly, does not submit on time assigned homework, etc.,) and does not officially drop the course will be given an “F” as the semester grade.

**University Drop/Withdrawal Policy:**

If at any point, a student decides to drop the course, it is the student’s responsibility to officially drop the course. The drop dates enforced by the University can be found from the University Academic Calendar “<http://www.lamar.edu/academics/index.html>”, or “<http://events.lamar.edu/academic-calendar-listing.html>”. Any student who stops actively participating in the course (e.g. not checking course on Blackboard, submitting homework, etc.,) and does not officially drop the course will be given an “F” as the semester grade. The drop dates enforced by the university can be found from the university Academic Calendar “<http://events.lamar.edu/academic-calendar-listing.html>”.

**Online Course Support & Blackboard:**

- The course materials are being offered on-line via Blackboard. Students may access Blackboard either from <http://luonline.blackboard.com>, or from the Lamar website at <http://www.lamar.edu>. Regardless of how you enter:
    - Your “*username*” is the same as your myLamar username (see <http://my.lamar.edu> for details)
    - Your *password* is your student id number.
- \*View the Blackboard overview, located on the homepage, for more information about this system. The Center for Distance Education will provide technical support for the course. There is 24 hour access for help through voice mail through this Center. The Center can assist you with any technical problems that you may develop; the phone number is (409) 880-7849.
- Please use these resources to assist you with any technical problems that may develop.

**Special Accommodations:**

It is the policy of Lamar University to accommodate students with disabilities pursuant to federal and state law, and the University’s commitment to equal educational opportunities. Any student with a disability, who needs accommodation, should inform the instructor at the beginning of the course.

**Students with Disabilities:**

It is the policy of Lamar University to accommodate students with disabilities, pursuant to federal and state law and to the University’s commitment to equal educational opportunities. Students with a documented disability should contact the Director of the Office of Services for Students with Disabilities (SFSWD) which is located in 105 Communication Building. Students may write to P.O. Box 10087, Beaumont, Texas 77710, call 409.880.8347, fax 409.880.2225 or e-mail [SFSWD@lamar.edu](mailto:SFSWD@lamar.edu). The Director will arrange to meet with the student to determine reasonable academic adjustments and/or accommodations. Additional information is available at <http://dept.lamar.edu/sfswd>.

**Library Services:**

Library services can be accessed at <http://library.lamar.edu/>

**Emergency Procedures:**

Many types of emergencies can occur on campus; instructions for severe weather or violence/active shooter, fire, or chemical release can be found at:

<http://www.lamar.edu/about-lu/administration/risk-management/index.html>. Following are procedures for the first two:

**Severe Weather:**

- Follow the directions of the instructor or emergency personnel.
- Seek shelter in an interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside.
- If you are in a multi-story building, and you cannot get to the lowest floor, pick a hallway in the center of the building.
- Stay in the center of the room, away from exterior walls, windows, and doors.

**Violence/Active Shooter (CADD):**

- CALL - 8-3-1-1 from a campus phone (880-8311 from a cell phone). Note: Calling 9-1-1 from either a campus phone or cell phone will contact Beaumont City Police Dispatch rather than University Police.
- AVOID- If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.
- DENY- Barricade the door with desks, chairs, bookcases or any other items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police it is safe.
- DEFEND- Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.

Last modified August, 2017