SYLLABUS

COURSE NUMBER: CSC 656

COURSE TITLE: Foundations of Computer Science

CREDITS: 3:3:0

PREREQUISITES/COREQUISITES: CSC 350 or permission of instructor.

FOR WHOM PLANNED: Graduate students in Computer Science.

INSTRUCTOR INFORMATION:
Dr. Francine Blanchet-Sadri
Office number: 157 Petty Building
Office hours: MWF 7:20am–8:00am or by appointment
Phone number: 336–256–1125
E-mail address: blanchet@uncg.edu

CATALOG DESCRIPTION: Introduces the mathematical foundations that support advanced studies in computer science including computer programming and the analysis of algoritms.

STUDENT LEARNING OUTCOMES: The primary aim of the course is to provide a solid and relevant base of mathematical skills for graduate studies in Computer Science.

TEACHING STRATEGIES: Group lecture is the primary mode of instruction.

EVALUATION METHODS AND GUIDELINES FOR PROJECTS:

- Students taking CSC 656 will be divided into teams. Each team is required to work on a project for the whole semester. Each team will give two 45-minute presentations on their project. The weight of each presentation is 20 points.

- Students will work on a technical paper related to their team project: they will perform experiments related to their paper, will develop related algorithms and study their complexity, will generate related conjectures and prove results. The weight of each student's contributions to his/her team project is 25 points.

- 10 points for class participation (this includes no absences, no late arrivals, asking questions, answering questions, etc.)

In summary:

Contributions to Team Project 1, *September 27*: 25 points

Team Project Presentations 1, *September 29–October 6*: 20 points

Contributions to Team Project 2, *November 13*: 25 points

Team Project Presentations 2, *November 15–November 29*: 20 points

Class Participation, *August 16–November 29*: 10 points

REQUIRED TEXT/READINGS/REFERENCES: Francine Blanchet-Sadri, Algorithmic Combinatorics on Partial Words, Chapman & Hall/CRC Press ©2008. The following links

<div align="center">

www.uncg.edu/cmp/research/partialwords
www.uncg.edu/cmp/reu/resources

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contain useful information on relevant papers, recommended literature, latex guidance, html assistance, beamer advice, technical writing, organizations, conferences, and journals related to the course.

Basics include:

1 Preliminaries on Partial Words

    1.1 Alphabets, letters, and words

    1.2 Partial functions and partial words

    1.3 Periodicity

Projects (and related links) include:

Team 1: SQUARES AND PRIMITIVITY ON PARTIAL WORDS

`www.uncg.edu/cmp/research/squares4-squares5`

Team 2: BORDER CORRELATIONS, LATTICES, AND THE SUBGRAPH COMPONENT POLYNOMIAL

`www.uncg.edu/cmp/research/bordercorrelations2`

Team 3: NEW BOUNDS AND EXTENDED RELATIONS BE-TWEEN PREFIX ARRAYS, BORDER ARRAYS, UNDI-RECTED GRAPHS, AND INDETERMINATE STRINGS

`www.uncg.edu/cmp/research/arrays`

Team 4: COMBINATORICS ON PARTIAL WORD BORDERS

`www.uncg.edu/cmp/research/countingpwords2-primitivity4`

ACADEMIC HONOR CODE: Each student is required to sign the Academic Integrity Policy on all major work submitted for the course.

ATTENDANCE POLICY: Students are expected to attend all the lectures. If a student misses any of them, it is his/her responsibility to find out what went on during the lecture and to collect any material that was handed out. Any student missing more than three lectures will fail the course (see ADDITIONAL REQUIREMENTS below).

ADDITIONAL REQUIREMENTS: Students will be allowed to drop the course after the drop deadline if there is supporting evidence of problems interfering with adequate course performance.

No make-up presentation is given unless extenuating circumstances are proved.

I may withdraw a student from the course for behavior that is deemed by me to be disruptive to the class. The grade assigned will be "W" if the behavior occurs before the deadline for dropping the course without academic penalty, and I have the option of giving a "W" or a "WF" if the behavior occurs after the deadline. (Refer to POLICIES FOR STUDENTS)

Note that late arrivals are considered disruptive to the class. Any two late arrivals will be counted towards the missing of a lecture (see ATTENDANCE POLICY above).

No late work will be accepted.