DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2018 CS2720 (A3)

Formal Systems and Logic in Computing Science **3 (3-1-1.5) UT, 15 weeks, 82.5 Hours**

INSTRUCTOR:	Dr. Brian Redmond	**PHONE:**	780-539-2093
OFFICE:	J206	**E-MAIL:**	bredmond@gprc.ab.ca
OFFICE HOURS:	TBA		

CALENDAR DESCRIPTION: An introductory course to present the tools of set theory, logic and induction, and their use in the practice of reasoning about algorithms and programs. Basic set theory. The notion of a function. Counting. Propositional and predicate logic and their proof system will be studied. Inductive definitions and proofs by induction will be covered along with program specification and correctness.

PREREQUISITE(S)/COREQUISITE: 1000-Level CST course

REQUIRED TEXT/RESOURCE MATERIALS: Discrete Mathematics and Its Applications (7E) by Kenneth H. Rosen.

DELIVERY MODE(S):	Lectures:	A3	T, R	10:00-11:20	J202
	Lab:	S1	M	2:30-3:20	J202
	Lab:	L1	M	3:30-4:50	J101

COURSE OBJECTIVES: This course is an introduction to discrete mathematics for reasoning about algorithms and programs. The main topics covered include: propositional and predicate logic, proofs, basic set theory, algorithms and their complexity, induction and recursion (along with program correctness), functions and relations, Boolean algebras, and models of computation.

LEARNING OUTCOMES: To demonstrate basic knowledge of set theory, logic and induction, and their use in the practice of reasoning about algorithms and programs. To implement these concepts by writing simple programs in the programming language PROLOG and/or Python.

TRANSFERABILITY: Please consult the Alberta Transfer Guide for more information (www.albertatransfer.com)
** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

EVALUATIONS:

Assignments	10%	
Labs	10%	
Quizzes	10%	
Midterm	25%	
Final Exam	45%	April 16-26 inclusive (including Saturdays and evenings)

GRADING CRITERIA:

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week 1	Jan. 4-5	Chapter 1	Thurs. Jan. 5 first day of class
Week 2	Jan. 8-12	Chapter 1	
Week 3	Jan. 15-19	Chapter 1/2	
Week 4	Jan. 22-26	Chapter 2	
Week 5	Jan. 29-Feb. 2	Chapter 2/3	
Week 6	Feb. 5-9	Chapter 3	
Week 7	Feb. 12-16	Chapter 5	
Week 8	Feb. 19-23		Winter Break (no classes)
Week 9	Feb. 26-Mar. 2	Chapter 5	**Tues. Feb. 27 – Midterm Exam**
Week 10	Mar. 5-9	Chapter 9	Tues. Mar. 6 last day to withdraw
Week 11	Mar. 12-16	Chapter 9	
Week 12	Mar. 19-23	Chapter 12	
Week 13	Mar. 26-30	Chapter 12/13	(College closed Friday, Mar. 30)
Week 14	Apr. 2-6	Chapter 13	
Week 15	Apr.9-13	Review	Friday. Apr. 13 last day of classes
Final Exam Period	Apr. 16-26		

STUDENT RESPONSIBILITIES: Regular attendance and participation (including homework) is required for the successful completion of this course. Assignments must be handed in on time, and quizzes/exams must be written on the days announced in class or on moodle. If an emergency prevents a student from writing a test/exam on the scheduled day, the student must contact the instructor immediately to make other arrangements. Otherwise, the student will receive a zero grade for that component of the course.

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the College Admission Guide at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/**

**Note: all Academic and Administrative policies are available on the same page.