CSE371, MAT371
LOGIC
Professor Anita Wasilewska
Web page: www.cs.stonybrook.edu/~cse371
Fall 2015

Lecture  MONDAY, WEDNESDAY  5:30pm - 6:50 pm
Location  Mellvile Library W4540
Professor  Anita Wasilewska, e-mail: anita@cs.stonybrook.edu
          Please e-mail the professor with serious concerns only.
Phone number  632 8458
Office Hours  Monday, Wednesday  12:30 pm - 2:00 pm and by appointment.
              Comp. Science Building room 208, telephone: 2-8458.
TA      TBA
e-mail

TA Office Hours  TBA

Important  There is no recitations, but I will cover solutions to homework assignments and held ques-
tions/answers sessions each week in class.

BOOKS
Main text:  Anita Wasilewska, An Introduction to Classical and Non-Classical Logics ,
            Book in Progress
            All book chapters, and lecture slides on are posted on the course webpage; please print them and bring
to class.
            Additional texts:
vanced Books &Software, PACIFIC GROVE, CALIFORNIA
            Any Logic Textbook you find in the Library

Course Goal  The goal of the course is to make student understand the need of, and to learn the
formality of logic. I will progress relatively slowly, making sure that the pace is appropriate for the
undergraduate class. But it doesn’t mean that you can just come to class and listen without doing
work at home!! You have to go over the text in proper chapters; in fact to go over and over again!
The book is written with students on my mind so that they can read and learn by themselves, even
before coming to class. For sure, it is essential to study after the class.
The book, and the course is developed to teach not only intuitive understanding of different logics,
but (and mainly) to teach formal logic as scientific subject, with its language, definitions and
problems.
Workload  There will be 6 quizzes, one midterm and a final examination.

The consistency of your efforts and work is the most important for this course.

None of the grades will be curved.

Quizzes: total 100pts  There will be 6 quizzes (20 minutes), 20 points each.

NO MAKE-up for quizzes.

I might give some additional quizzes for extra credit

Observe that I am giving you 6 quizzes, and you need only 5 to get the full 100pts.

Quizzes will be given on MONDAYS - at the end of the class. I will answer students questions before distributing the Quiz.

Each quiz will consist of 2 -3 questions only: one will cover theoretical material, mainly definitions from the list of definitions you must know that I publish in Review Lectures on the course webpage, the others will be simple problems.

The problems will MAINLY be taken from Problems Solved or listed in the book and Homework Assignments located at the end of the chapters of the book, or from Lectures, or from previous published quizzes and Tests

Quizzes and Tests are closed book examinations.

Midterm (100pts)  Midterm will cover material from Q1, Q2, and Q3.

Final (200pts)  Final test will cover some material from the midterm, but mainly (70%) the material covered after the midterm, i.e. material covered by Q4 and Q5.

It is REGULAR TEST scheduled at the regular UNIVERSITY TIME for finals.

Previous TESTS and Quizzes  I posted a collection of past Quizzes and Tests on the course Webpage.

They are designed to help you to learn what you have learned and what you still don’t understand from the material covered by the test. You can take them for your own practice (don’t need to submit it)

Practice tests policy  published Practice quizzes and tests are designed to help you to learn what and how much you have learned and what you still don’t understand from the material covered by the test.

Final grade computation  You can earn up to 400 points + X extra credit points = (400 + X ) points during the semester.

Extra points are BENEFICIAL for students as they add to the TOTAL number of points!!

None of the grades will be curved  The grade will be determined in the following way:

# of earned points divided by 4 = % grade.

The % grade is translated into a letter grade in a standard way i.e.

100 – 95 % is A,  94 – 90 is A−,
89 – 86% is B+,  85 – 83 % is B,  82 – 80 % is B−,
79 – 76 % is C+,  75 – 73 % is C,  72 – 70 % is C−,
69 – 60 % is D range and F is below 60%.
Quizzes and Tests schedule (can be changed- changes will be advertised on the course webpage

Observe that we have no classes September 7-8

Q1 Monday, September 14
Q2 Monday, September 28
Q3 Monday, October 12

MIDTERMN Monday, October 19 in class

Q4 Monday, November 2
Q5 Monday, November 10
Q6 Monday, November 23

Thanksgiving Break November 25 - 29

Last Class Wednesday, December 2

FINAL The final will be given during the University assigned place and time during the FINALS period December 8 -16

COURSE CONTENT The course will cover in depth the following subjects.

Part one Motivation, history, syntax and semantics for classical propositional calculus. Formal languages, formal definitions of model, counter model, tautology. Semantics for some three valued logics.

Part two Intuitive Introduction to First Order Logic: First Order languages and basic tautologies.

Part three Formal deductive systems, called also proof systems. General definition and examples. Definition of a formal proof. Relationship between proof systems and their semantics, i.e. general definition of notions of soundness and completeness of a given proof systems relatively to given semantics. Definition of a logic as a complete proof system.

Part four: Hilbert style proof systems for classical propositional logic. Proofs of DEDUCTION theorem, and two different proofs of the COMPLETENESS theorem.


Part six A Hilbert style proof system for Intuitionistic Logic. Relationship between Intuitionistic and Classical logics.

Part seven Automated proof systems 2: Gentzen proof system for Intuitionistic Logic. Heuristic decision procedures.

Part eight Formal Introduction to First Order Logic.

Part nine A Hilbert style proof systems for Modal Logics S4 and S5. Relationships with Intuitionistic Logic.
ACADEMIC INTEGRITY STATEMENT  (Adopted by the Undergraduate Council September 12, 2006)

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person’s work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

Stony Brook University Syllabus Statement If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services at (631) 632-6748 or http://studentaffairs.stonybrook.edu/dss/. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: http://www.sunysb.edu/ehs/fire/disabilities.shtml