ATENEO DE MANILA
UNIVERSITY
Loyola Schools

A. COURSE INFORMATION

COURSE NUMBER	MATH 71.1	**NO. OF UNITS**	3
COURSE TITLE	Fundamentals of Computing I		
PREREQUISITE/S	None		
DEPARTMENT	Mathematics	**SCHOOL**	Science and Engineering
SCHOOL YEAR	2020-2021	**SEMESTER**	1st (Quarter 1)
INSTRUCTOR/S	Winfer C. Tabares		
VENUE/PLATFORM	Canvas	**SECTION**	B and C
SCHEDULE	TTh 0800-0930 (Section B), 1100-1230 (Section C)		

B. COURSE DESCRIPTION

This course provides an introduction to computer programming through the use of the R programming language and gives a brief overview of database theory. It covers an introduction to database, computers, recursion, abstract data types, and programming interfaces. In-class lectures and discussions are supplemented by computer hands-on sessions.

WHERE IS THE COURSE SITUATED WITHIN THE FORMATION STAGES IN THE FRAMEWORK OF THE LOYOLA SCHOOLS CURRICULA	
X	FOUNDATIONS: Exploring and Equipping the Self
	ROOTEDNESS: Investigating and Knowing the World
	DEEPENING: Defining the Self in the World
	LEADERSHIP: Engaging and Transforming the World

C. COURSE LEARNING OUTCOMES

Alignment of the Course to the Core Curriculum Learning Outcomes

The Ideal Ateneo Graduate: A Person of Conscience Competence Compassion Commitment							
CCLO 1	CCLO 2	CCLO 3	CCLO 4	CCLO 5	CCLO 6	CCLO 7	CCLO 8
	CLO 1-4						

By the end of this course, students should be able to:

COURSE LEARNING OUTCOMES
CLO1: (S) Use basic queries in working with databases
CLO2: (S) Use computation in solving problems
CLO3: (K) Exhibit proficiency in writing simple programs to solve some quantitative problems.
CLO4: (A) Demonstrate a sense of appreciation in creating and using classes and objects in solving these problems.

D. COURSE OUTLINE and LEARNING HOURS

Course Outline (M# is Module Number)	**CLOs**	**Estimated Contact or Learning Hours**
(M1) Introduction to SQL	CLO 1	8
(M2) Database Design	CLO 1	8
(M3) The Basics of R	CLO 2, 3	8
(M4) Data Handling in R	CLO 2, 3	8
(M5) R Objects: Subsetting and Vectorized Operations	CLO 2, 3	8
(M6) Control Structures and Functions in R	CLO 2, 3, 4	8
(M7) Data Visualization in R	CLO 2, 3, 4	8
		56

E. ASSESSMENTS

Assessment Tasks	Assessment Weight	CLOs
Quizzes (Modules 1 and 2) (60 points)	20%	CLO 1, 2, 3, 4
Quizzes/Programming Exercises (Modules 3-7) (90 points)	30%	CLO 1, 2, 3, 4
Problem Set 1 (Modules 3 and 4) (75 points)	25%	CLO 1, 2, 3, 4
Problem Set 2 (Modules 5 and 6) (75 points)	25%	CLO 1, 2, 3, 4

Quizzes will be given every week in various forms throughout the semester. Problem Sets will be given a week before the due date. Problem Set 1 will be due on **October 14** while Problem Set 2 will be due on **October 28**.

F. TEACHING and LEARNING METHODS

TEACHING & LEARNING METHODS and ACTIVITIES	CLOs
Synchronous Online Sessions (done every Tues and Thur) via Zoom. *Create a Zoom account using your obf email. Always use that when joining our Zoom sessions. Additional sessions will be announced as needed on an agreed time determined at the start of the semester.*	CLO 1, 2, 3, 4
Asynchronous Solving of Exercises and Problems	CLO 1, 2, 3, 4
Consultations	CLO 1, 2, 3, 4
Guided Self-Study	CLO 1, 2, 3, 4

G. REQUIRED READINGS

1. Introduction to SQL, *SQLBol - Learn SQL with simple, interactive exercises,* https://sqlbolt.com
2. Peng, R., *R Programming for Data Science (2019),* Leanpub.

H. SUGGESTED READINGS

1. Peng, R., *Exploratory Data Analysis with R (2020)*, Leanpub.
2. Russo, J., *SQL by Example (2018)*, Momentum Press.
3. Grogan, M., *Python vs R for Data Science (2018)*, O'Reilly Media, Inc.
4. Davies, T., *The Book of R: a first course in programming and statistics (2016)*, No Starch Press.
5. Grolemund G. and Wickham H., *R for Data Science (2016)*, O'Reilly Media, Inc.

I. GRADING SYSTEM

Final Grade (FG)	Letter Grade	Final Grade	Letter Grade
FG ≥ 92	A	68 ≤ FG < 74	C
86 ≤ FG < 92	B+	60 ≤ FG < 68	D
80 ≤ FG < 86	B	FG < 60	F
74 ≤ FG < 80	C+		

J. CLASS POLICIES

1. The official learning management system for this course will be Canvas.
2. Only students who are officially enrolled will be included in the Canvas class.
3. Only students who are officially enrolled will be allowed to take assessments.
4. Students who require support for Canvas may seek help by sending an email to ls.one@ateneo.edu or chatting with LS-One through that account using their obf email.
5. Student access to the Canvas course will be closed a week after the electronic release of grades for the first quarter. Students are encouraged to download the course materials as well as the records of their grades before the Canvas course closes.
6. Grades reflected on Canvas are not necessarily the official grades for the class.
7. Students with no or very unstable internet connection are advised to immediately inform (by email or through a phone call) (a) their Chair/ Program Director, (b) ls.one@ateneo.edu, and (c) me so that the appropriate assistance can be extended and adjustments can be made. If necessary, portable learning packets that can be in the form of flash drives or printed materials can be sent to the students.
8. It would be nice if students' cameras are kept open during synchronous sessions so that I can see who I am talking to and receive non-verbal feedback. But keeping cameras open is not required.
9. Students are requested to wear decent clothes (no sando, no revealing garments) during synchronous sessions. Wearing clothes you would normally wear to school also helps set the tone and focus for the class.
10. Attendance at synchronous sessions will not be checked. As such, students cannot overcut/ cannot receive a grade of W for this course.
11. A recording of synchronous sessions will be made available within the day of the session.
12. For questions regarding MATH 71.1, it is preferred that students use the Inbox or Chat feature of Canvas. This allows me to better organize student questions. You may also send me an email at wtabares@ateneo.edu.
13. Feedback on submitted output will be given not later than one week after submission.
14. Ateneo de Manila University does not discriminate on the basis of sex, gender, marital or parental status, sexual orientation, or gender identity or expression. See the following link for more information on the LS Gender Policy: http://www.ateneo.edu/ls/ls-gender-policy.

K. CONSULTATION HOURS

NAME OF FACULTY	EMAIL	DAY/S	TIME
Winfer C. Tabares	wtabares@ateneo.edu	MWF	1500-1700

Consultation Hours are subject to change to adjust to the availability of the students. Any changes will be announced within one week from the start of classes.

L. ADDITIONAL NOTES

1. If there are any current or emergent circumstances that make online learning difficult for you, I would appreciate it if you inform me right away.
2. Students are encouraged to use the chat function at any time during the synchronous session (and not just when I ask if there are questions). This gives me a sense of what you're thinking and what your reactions are. In a face-to-face situation, teachers prefer students (to recite but) not to chat in class but in an online environment, the chat is preferred. Students are also encouraged to reply to each other's chat messages.