REVISED VERSION, 5 FEBRUARY 1991

Lecturer: Prof. William J. Rapaport, 214 Bell Hall, 636-3193, Office Hours: To Be Announced, or by appointment.

Class Meetings:

CLASS	INSTRUCTOR	REGISTRATION NO.	DAYS	FROM	TO	LOCATION
Lecture	Rapaport		TR	9:30 A.M.	10:45 A.M.	322 Fillmore
Recitation A1	Henry Hexmoor	057892	R	8:00 A.M.	8:50 A.M.	322 Fillmore
Recitation A2	Henry Hexmoor	057790	R	12:30 P.M.	1:20 P.M.	322 Fillmore
Recitation A3	Nickie Democko	229196	F	10:00 A.M.	10:50 A.M.	322 Fillmore

Laboratories:

Note: This information will be updated later in the semester.

188 Alumni Arena Open Lab. Contains 30 Macintosh SEs. Staffed by Computer Science Assistants. Open M–F 10:00 A.M. – 9:00 P.M.; Sat–Sun 2:00–5:00 P.M.

338 Bell Hall Open Lab. Contains 20 Macintosh SEs. Staffed by Computer Science Assistants. Open 7 days a week, 2:00 P.M.–12:00 MIDNIGHT; Fri/Sat might close early if no one is there.

202J Baldy Hall Open Lab. Contains 30 Macintosh SEs. Staffed by UCS consultants. M–F 9:00 A.M.–11:00 P.M.; Sat–Sun 12 NOON–5:00 P.M. Occasionally reserved for classes.

201 Capen (SEL): Open Lab. Contains 12 Macintosh SEs. Staffed by UCS consultants. Open whenever the library is open.

Course Materials:

Text: D. D. Riley, *Using Modula-2: An Introduction to Computer Science I,* Boston: Boyd & Fraser, 1987.

Manual & Software: *Metrowerks Modula-2 StartPak,* New York: Macmillan, 1988-90.

Extra disks: You'll need at least two extra 3.5 in. double sided disks.

Topics: This course is an introduction to computer *science* (not merely to computer *programming*). The two major topics to be covered will be (1) the nature, subject matter, and branches of computer science as an academic discipline and (2) the nature, development, coding, testing, documenting, and analysis of the efficiency and limitations of algorithms. Emphasis will be placed on techniques for creating algorithms by the methods of top-down design and stepwise refinement. The algorithms will be implemented as computer programs expressed in the high-level, structured programming language Modula-2. We shall cover the fundamental programming-language concepts of data types, control structures, procedures and functions, parameter passing and scope rules, input/output, arrays, and records, as well as algorithms for sorting and searching. **Prerequisite:** 4 years of high-school mathematics; some experience with a high-level language (e.g., Modula-2, Pascal, Fortran, Basic).

Important Dates:

Tuesday	January	22	First Lecture
Thursday	January	24	First meeting of Recitations A1 & A2
Friday	January	25	First meeting of Recitation A3
THURSDAY	MARCH	7	*** MIDTERM EXAM ***
Friday	March	15	*** Last day to withdraw with a grade of 'R' ***
Saturday–Sunday	March	23–31	Spring break; no classes
Thursday	May	2	Last meeting of Recitations A1 & A2
Friday	May	3	Last meeting of Recitation A3
Tuesday	May	7	Last Lecture
	May	11–17	Exam Week (Assume our Exam is Friday afternoon)

Tentative Schedule:

Chapter	Topic	Lecture Dates
	Introduction	January 22
1	Computer Programming	January 24
2	Modula-2 Programs	January 29, 31
3	Top-Down Design & Stepwise Refinement	February 5
4	Structured Programming	February 7, 12
5	Selection & Repetition	February 14, 19
6	Logic & Boolean Expressions	February 21, 26
7	Procedures & Functions	February 28; March 5
	MIDTERM EXAM	March 7
	Review of Midterm Exam	March 12
8	Files	March 14
9	Selection (continued)	March 19
10	Repetition (continued)	March 21; April 2, 4
11	Data Types & Data Abstraction	April 9, 11
12	Arrays	April 16, 18, 23
13	Arrays (continued)	April 25, 30
14	Records	May 2
	Review	May 7

Keeping Up with the Reading:

1. I will expect you to have read each chapter *before* the first day of my lecture on it.

2. I strongly recommend that you *re*-read each chapter *after* my lectures on it.

3. See the handout, "How to Read (a Computer Science Text)".

4. You should try all exercises whose answers are given in the text.

5. Not all material in the text will be covered in lecture (in lecture, we shall only cover interesting or hard material, plus occasionally material that is *not* in the text), but you are responsible for *all* material in the text and lectures.

Attendance: You will be expected to attend all lectures and recitations. Homework and programming-project assignments will be announced during lecture. Be sure to get a classmate's phone number, so that you will not miss assignments in the unlikely event that you miss a class.

Grading: All graded work will receive a letter grade, 'A', 'A-', 'B+', 'B', 'B-', 'C+', 'C', 'C-', 'D+', 'D', or 'F'. At the end of the semester, final grades will be calculated as a weighted average of all letter grades according to the following weights:

Midterm Exam	25%
Final Exam	25%
Total Projects (approx. 5 or 6)	30%
Total Homeworks (approx. 1 per week)	20%
Total	100%

Homeworks: The purposes of homework exercises are: to give you hands-on experience with relatively small problems; to give you a chance to assess the level of your understanding; to give you experience with the kinds of questions that may be asked on exams. Small programming exercises may be assigned as homework exercises. You will have between two days and two weeks to do each homework exercise. The due date will be announced when the homework is assigned. It will always be at the beginning of a lecture meeting. **NO LATE HOMEWORKS WILL BE ACCEPTED.** This is so that the instructor may discuss the homework in the class period when it is due. Put your name and your recitation (A1, A2, or A3) at the **top right-hand side** of the first page, and secure all pages with a **staple** in the **top left-hand corner**. **Note:** The lowest homework grade will be dropped; you should assume that you will fail to turn in one homework (oversleep, get stuck in traffic, etc.)—that's the one that will be dropped. If you know *now* that you will regularly be late, see me to make alternative arrangements for turning in the homeworks.

Projects: The purposes of programming projects are to give you hands-on experience in designing, coding, testing, debugging, and documenting programs. The programs will be relatively short, and will be chosen to illustrate particular techniques or issues.

For each project, unless otherwise instructed, you will be expected to hand in a problem definition as shown in the text, documented source code, including the first several levels of refinement in the "outline" form as shown in the text (to be discussed in lecture), and sample runs of the program. These are to be printed on 8.5 x 11 inch paper, with your name and recitation at the top of the first page, stapled in the top left-hand corner. You may be asked to turn in a disk containing your program as well.

You will have one to three weeks to do each project. They will be due in either the Alumni 188 or the Bell 338 lab by lab closing time on the due date. Late projects may only be handed in to me at the **beginning** of lecture and will lose 1/3 letter grade per class day late (e.g., a project normally worthy of a B due on a Tuesday that is handed in to me at the beginning of class on the next Thursday would get a B-; handed in on the following Tuesday, it would get a C+; and so on. The final project, however, may *not* be late. Your grade will generally be much higher if yo turn in an incomplete project on time (with a description of the bugs) than if you turn in a complete project late.

Academic Honesty: While it is acceptable to discuss general approaches with your fellow students, the work you turn in must be your own. *If the work of two or more students appears unjustifiably similar, penalties will be assessed to all concerned.* If you have any problems doing the homeworks or projects, consult the TAs or the Lecturer. Do not loan or give non-empty disks or program listings to any other student under any circumstances!

Incompletes: It is University policy that a grade of Incomplete is to be given only when a small amount of work or a single exam is missed due to circumstances beyond the student's control, and that student is otherwise doing passing work. I will follow this policy. Any incompletes will have to be made up **before** the beginning of the Fall 1991 semester, since I will be on sabbatical (and therefore will not be available) after that.