

University of Delaware
Mathematical Sciences
Spring 2012

Math210 Discrete Mathematics I Section 50

Schedule: Mon, Wed 7pm – 9pm in Ewing Hall 203

Lecturer: Dr. Robert Coulter in Ewing Hall 520
Office Hours: Mon 2 – 4
Phone: 831-1878
Email: coulter@math.udel.edu

Teaching Assistant: None supplied for evening sections

Text: E.G. Goodaire & M.M. Parmenter
Discrete Mathematics with Graph Theory
3rd ed., Prentice Hall, 2006.

Policy for Office and Contact Hours

Your first attempt to obtain help on any course content should be via the office hours. I will be available during the office hours given specifically for consultation regarding this subject. If you cannot make office hours and require some assistance, then you should contact me to make an appointment first – do not simply turn up expecting help. Outside those times other matters will have priority; the university does employ me to do things other than teach!

Assessment

The breakdown of assessment is as follows: there will be four assignments, each worth 5% and four exams, each worth 20%. You should keep in mind that there is no curving in my assessment policy – you are not here to show me you are better than your colleagues, you are here to show me you understand the course material. The first 3 exams will be in-class, the last in final exam period. The subject will be split into four roughly equal portions. Each exam will examine a portion in turn (no cumulative exams). The dates for the exams will be announced at least one week ahead of time (the material to be covered in these exams will be given at that time). **Note that a replacement exam will be given only in the case of a documented serious emergency and, where possible, notification is expected to be given to me a minimum of one day before the exam is due to be sat.** Assignments will be handed out at least two weeks before they must be handed in. Extensions for assignments will not be given. **Academic dishonesty will be prosecuted to the maximum extent allowed under University of Delaware policy.**

The grade scale for this course is very simple: starting from 95%, each 5% interval reflects a new grade: so 91-100% = A, 86-90% = A-, 81-85% = B+, and so on. If you work through it, you'll find a C- corresponds to a score of 56-60%. This might sound low, *but be warned!!*, Discrete Mathematics is unlike most other mathematics you've seen; it emphasises understanding and logical argument rather

than methodology. For this reason, many students find this course very difficult, particularly early on. That is not to say that good grades cannot be achieved, but to do so, you will need to make sure you stay well on top of the material right from the start.

Course Content

Time permitting, it is intended that the following sections of the text will be covered. However, some sections may not be covered in full while others will be presented in a different order to that presented in the textbook. Note, also, that some parts may not be covered at all in a given semester due to time constraints.

Chapter	Title	Sections	Approx. Duration
0 & 1	Logic	0.1, 1.1	4 lectures
2	Sets and Relations	2.1–2.4	7–8
3	Functions	3.1–3.3	2–3
4	The Integers	4.1–4.4	6–7
5	Induction and Recursion	5.1	2–3
6 & 7	Counting	6.1–6.3, 7.1–7.2, 7.5, 7.7	7–8
9 & 10	Graphs	9.1–9.3, 10.1–10.2	5–6

Class Meetings

Some class time will be set aside for discussion. If you want to maximise your gains from lectures and particularly from discussions, you should look to have attempted some questions on the material recently covered in lectures. The textbook has many good questions and also some solutions; additionally, the solutions manual for the text is in the reserve section of the central library. I encourage you to discuss the subject matter and problems (excluding assignment questions!) with your classmates; discussions with colleagues often clarify concepts and thought processes; this topic is very much about concepts and thought processes. Mathematics is not taboo, so don't be shy.

Some Final Advice

Mathematics can be an enjoyable subject, but you have to be involved. The lectures will present the course material in a slightly different way to the textbook. This means you will have two sources directly available to you. You should make sure you read them both – at different times you may find that one is easier to understand than the other.

The bottom line is mathematics is a constructive subject – it builds on earlier material. So make sure you stay on top of the subject by spending just a little time on it everyday. Otherwise, this course will leave you behind. (In other words, don't expect to pass by cramming for exams!)

Finally, the importance of working independently on assignments cannot be over-emphasised. Apart from the obvious problems regarding academic honesty, the experience you gain from attempting to solve questions on your own forms a vital cog in the process of understanding the material. You will do poorly in the exams, which form the lion's share of the assessment, if you do not have this experience. Put another way, to maximise your exam grade and hence your overall grade, it is not worth maximising your assignment grade by working closely with others or copying their answers. By doing either, you will not gain any insight or understanding of the course material.