GMS 91, Intermediate Algebra

Fall 2009, 2:20-3:35 MW, LA-1

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Prerequisites: Completion of GMS 90 or appropriate score on the Entry Level Mathematics Exam.

Required text: Kolman, Shapiro: Intermediate Algebra for College Students, 5/e.

Course objective: This is a review course on intermediate high school mathematics. It covers linear, exponential, and logarithmic functions, complex numbers, exponents and radicals, quadratic equations and inequalities, factors and roots of polynomials. You will be expected to develop a facility with these topics at a level that permits you to enroll in college-level math courses.

I will assume that you have seen this material in high school already and you need practice to refresh and hone your skills. The course will be very much based on problem solving and you will do a lot of it on your own. We will solve some problems together in class, but you will also have to solve many problems outside of class.

Credit in General Mathematics Studies 91 satisfies the Mathematics Placement Examination, Part IA and Entry Level Mathematics Examination requirements.

Website: www.rohan.sdsu.edu/~ituba/gms91f09. I will also use Blackboard to post your exam grades periodically.

Furloughs: Due to the dramatic cuts to the CSU–the same cuts that have resulted in a 32% increase to your fees–every CSU faculty is required to take 9 unpaid days off per semester. My furlough days are Aug 31 (Mon), Sep 2 (Wed) and 8 (Tue), Oct 2 (Fri) and 6 (Tue), Nov 10 (Tue) and 25 (Wed), Dec 9 (Wed) and 18 (Fri). This class will not meet, and I will not be available for office hours, phone or email consultation on these days. Please, understand that these are not holidays. The amount of material we are expected to cover has not been changed. This means that you will have to do more work on your own and learn some of the material without my help.

It is obviously unreasonable to think that these furloughs will have no effect on your education. I know this and will take it into account when assessing your knowledge. But keep in mind that everything you do not learn, every skill you do not aquire will make you a less desirable employee, other than a less educated individual. It is particularly important that you do not skip class on the days that remain.

Class attendance: This is not distance education. You are expected to attend and participate in every class. If you skip class you will miss the chance to learn skills that will be tested on the exams. If you keep skipping class, I will think that you are not serious about your education and will remember that when I assign your grade at the end of the semester.

On work outside of class: Have you ever wondered why taking 12 units of classes qualifies you as a full time student? That's only 10 hours per week in class. The reason is that you are expected to do a lot of work on your own outside of class. In fact, the rule of thumb of college education is that for every hour you spend in class, you should expect to spend three hours studying outside of class. That is how 12 units makes full time: 10 hours in class and 30 hours studying outside of class each week. That means you'll need to spend about 7.5 hours a week studying outside of class for this course. That is if you are well-prepared for the course. If your math background is lacking, then you'll have to spend more time. I am not kidding.

Homework and reading will be posted on the class website regularly. You will be able to follow the progress of the course using the website. HW is an essential part of your learning. Take it very seriously. It is extremely important that you keep up with the HW. If you do not, you will quickly find yourself lost in class and at a great disadvantage during exams. Expect to spend about 8 hours a week on studying outside of class. (This is why 12 units are considered a full course load.) Treat the HW as a learning opportunity, rather than something you need to get out of the way. Reread, revise, and polish your solutions until they are correct, concise, efficient, and elegant. This will really deepen your understanding of the material. You are unlikely to succeed in a math class without doing all of the HW. Attending class and reading your textbook are necessary but not enough to pass the course. Expecting to learn math without doing exercises on your own is like expecting to learn to ride a bicycle without ever sitting on a bicycle.

Half of every exam will consist of exercises straight from the HW. A thorough familiarity with the exercises will obviously be an immense asset in doing them correctly on the exam.

There is an obvious winning strategy. Do the HW, seek feedback on it, revise it, and keep your HW notes neat and organized. The familiarity you gain with the exercises by doing this will let you complete half of each exam with ease and move quickly onto the other half of the exam. The experience you gain by keeping up with your HW will be invaluable in doing the other half of the exam. On the other hand, if you do not keep up with your HW, you will face the challenge of solving many unfamiliar problems under time pressure during the exams. You will likely find this an impossibly daunting task and your grade will reflect it.

Collaboration on the HW: Limited collaboration with your fellow students in the class is OK. The idea is to let you discuss and critique each other's ideas and not to let you split the workload. Keep collaboration constructive and reasonable. You should fully understand the solution and write it up on your own. Your understanding of the material will be tested on the exams.

If you are approached by another student from the class who wants to copy your HW notes, think twice before generously sharing. You will feel very bad if your crafty buddy outscores you on an exam by exploiting your and everybody else's collective wisdom without doing work of his/her own.

Discussion sections: I strongly encourage you to organize a weekly session to work with your fellow students on problems in class and on the homework. This will help you keep up with your work and get ideas and feedback from others who are grappling with the same exercises as you. You will find that the sense of companionship motivates and encourages you to work.

Exams: There will be two in-class exams as well as a final exam. The in-class exams will be on Oct 7 and Nov 2. If you skip an exam, you will normally not be able to make it up, unless you have a compelling (e.g. medical) and documented excuse. Forgetting that there is an exam or being unprepared for it are not considered compelling excuses.

Final exam: Time and place TBA.

Problem of the fortnight: The Mathematics Department in San Diego posts an interesting problem every two weeks. I will give you extra credit for every problem to which you submit a correct solution to the organizers of the contest. You can also win a t-shirt and, if your solution is deemed the best, a book. You will find a link to these problems on the class website.

Grading scheme:

Homework	40%
In-class exams	15% each
Final exam	30%
Problem of the fortnight	4% each

A score of 80% or more will guarantee an A- or better, 60% a B- or better, 40% a C- or better, and 20% a D- or better. The curve may be adjusted somewhat lower than this. GMS 91 is graded

on a credit/no credit basis. This means that the registrar will automatically convert your grade to credit if you earned at least a C and no credit, if you earned a C- or less. To give you a better idea of what these grades mean, here is a chart:

Grade	University policy	What this means in GMS 91
A	outstanding achievement; available only for the highest accomplishment	You are thoroughly familiar with all the mathematics covered in the course, can do all of the homework exercises, and can use the concepts you learned in this course to solve unfamiliar problems comparable in complexity to those done in class and on the homework. You are able to explain and justify your thinking in clear and compelling terms.
B	praiseworthy performance; definitely above average	You are familiar with all the mathematics covered in the course, can do most of the homework exercises, and can use the concepts you learned in this course to solve most unfamiliar problems comparable in complexity to those done in class and on the homework. You are able to explain and justify your thinking well and quite precisely.
C	average; awarded for satisfactory performance; the most common undergraduate grade	You are familiar with most of the mathematics covered in the course, can do the majority of the homework exercises, and can use the concepts you learned in this course to solve many unfamiliar problems comparable in complexity to those done in class and on the homework. You are able to explain and justify your thinking.
D	minimally passing; less than the typical undergraduate achievement	You are familiar with the majority of the mathematics covered in the course, can do many of the homework exercises, and can use the concepts you learned in this course to solve some unfamiliar problems comparable in complexity to those done in class and on the homework. You are able to explain and justify your thinking on some problems.
F	failing	You have difficulty with the majority of the mathematics covered in the course, cannot do most of the homework exercises, and cannot use the concepts you learned in this course to solve unfamiliar problems comparable in complexity to those done in class and on the homework. You cannot explain and justify your thinking on most problems.

Quality of work: It is important that you work neatly on the assignments. The quality of your work will affect your grades on the exams. Quality has to do with how easy it is for someone else to read your solution to a problem. It is not enough to do the math right, you must also communicate it well.

Students with disabilities: If you need special arrangements, let me know well in advance so we can plan to accommodate your needs.

On independent work: Problem solving skills are developed by practicing a lot, not by watching other people solve problems. Learning math is much like learning to ride a bicycle in that you learn by doing it and not by watching someone else do it. Attending class and reading the textbook won't be enough to do well on the exams. You should work through every example and argument in the book and in your class notes and expect to have to re-read everything several times. It's slow, but then your reading list for this class is short.