UNT Mathematics Major Advising

Summer 2015
Math Advising Team

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<thead>
<tr>
<th>Advisor</th>
<th>Office</th>
<th>e-mail</th>
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<tbody>
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<td><strong>Jay Liu</strong></td>
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<td>Undergraduate Advisor</td>
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<td>Undergraduate Advisor and</td>
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<td>Co-Director, Teach North Texas</td>
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<td>Actuarial Science Program</td>
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<td>Teach North Texas Program</td>
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<td><strong>Arts &amp; Sciences Advising</strong></td>
<td>GAB 220</td>
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Or, just send e-mail to: **MathAdvising@unt.edu**
Math Department information

BA with teacher certification: Requirements and Map
BA without certification: Requirements and Map
BA with actuarial science: Requirements and Map

BSM with teacher certification: Requirements and Two Maps (technical writing option and foreign language option)
BSM without certification: Requirements and Two Maps
BSM with actuarial science: Requirements and Two Maps
Your Folder: Right-Hand Side

- Mathematics Department and Teach North Texas trifolds
- Bachelor of Arts advisory sheet (yellow)
- Bachelor of Science advisory sheet (green)
- BA/BSM advisory sheet for math/physics certification (pink)
- Acknowledgement form (red, 2 copies)
- Welcome to the Department of Mathematics (green)
- Opportunities Available for Math Majors (white)
- Course Flow Chart (orange)
- CAS Core Curriculum (orange)
- Certificate in Mathematics of Scientific Computation (blue)
- Foreign Language Placement (white)
- Certificate in Statistics (green)
- Certificate in Actuarial Science (pink)
- Mathematical Scientists at Work (white)
- Advising Record (white, with carbon copy)
- Advising Survey (white)
Degree Requirements

- **Hour & GPA Requirements**
  - ≥ 120 hours required to graduate
  - ≥ 42 *upper-level (3000 and above)* hours to graduate
  - ≥ 2.0 GPA overall at UNT and in 3000+ level math courses

- **UNT Core (42 hours)**

- **Arts & Sciences Core**
  See the orange sheet in your folders.

  **Mathematics majors have a restricted choice of science courses** and BSM majors have a technical writing alternative to the foreign language requirement.

- **Mathematics Requirements**
What are the differences between the BA and the BSM degrees?

- **Number of math courses required:**
  - The BSM requires 9 mathematics courses beyond the math core.
  - The BA requires 7 mathematics courses beyond the math core.

- **Foreign language**
  - The BA requires two years (up through 2050) of foreign language
  - The BSM has two options for foreign language:
    - One year of foreign language (up through 1020)
    - or Two courses in technical writing

- **A small difference in the laboratory science requirement. Both degrees require the same number of science courses.**
Who Chooses Which Degree?

- Either the BA or the BSM can be made to work for any career path.
- The choice between BA and BSM often comes down to how many upper-level mathematics courses a student wants to take and what his/her feelings are about taking foreign language.

What types of students usually choose the BA?
- Some students planning to teach high school*
- Students double majoring in mathematics

What types of students usually choose the BSM?
- Students who will take more upper-level mathematics courses in preparation for a graduate degree in mathematics, the sciences, or engineering.
- Students who think that a “Bachelor of Science” degree will look more impressive to future employers on a resumé
- Students who do not want to take foreign language
- Students who want to take technical writing courses

*Students intending to teach high school are about equally divided between BA and BS. Some students find that they can schedule a student teaching semester within four years more easily with the BA degree.
Pre-major Mathematics Courses

Math 1100 **Algebra** Develops technical proficiency in algebra and prepares students for precalculus.

Math 1650 **Precalculus** Prepares students for calculus, including trigonometry.
Incoming freshmen receive an initial mathematics placement based on your class rank and your SAT-Math score.

- Not TSI complete: Math 1100 (Algebra) and UGMT 1300 (placed by Learning Center)
- Entry Group or Group 1: Math 1100 (Algebra)
- Group 2: Math 1650 (Precalculus)

If you are not TSI compliant and have not yet registered for Math 1100 and UGMT 1300, then you should visit the Learning Center as soon as possible so that you register for these classes. This needs to be done even if you passed MyMathTest. (That said, if you passed MyMathTest, we encourage you to retake the TSI test through the Learning Center.)
Incoming freshmen receive an initial mathematics placement based on your class rank and your SAT-Math score.

- Not TSI complete: Math 1100 (Algebra) and UGMT 1300 (placed by Learning Center)
- Entry Group or Group 1: Math 1100 (Algebra)
- Group 2: Math 1650 (Precalculus)

If you have college credit for calculus or precalculus as a result of AP credit, IB, dual credit, or other transfer credit, then this college credit supersedes this initial placement. If applicable, you should have already noted such credit on the inside front cover of your Advising Guidebook.

Also, if you have taken MyMathTest to take a higher-level math class, the results of MyMathTest supercedes your initial placement.
Mathematics Placement (freshmen only)

You are encouraged to attempt a placement test if you think you’re prepared to take a mathematics course higher than your initial placement. We don’t want you to take a lower-level math class if it can be avoided! There are two ways of doing this.

1. Accuplacer
   - Pros
     - It’s free!
     - It’s fairly quick.
     - It can be taken here today (in GAB 461)
   - Cons
     - If you do not pass, you do not get any guidance about what specific areas of mathematics you need to practice to succeed on your next attempt.
     - You are only permitted two attempts to pass the placement test.

Website: http://math.unt.edu/academics/mathematics-placement
Mathematics Placement (freshmen only)

You are encouraged to attempt a placement test if you think you’re prepared to take a mathematics course higher than your initial placement. We don’t want you to take a lower-level math class if it can be avoided! There are two ways of doing this.

2. ALEKS
   - Pros
     - You receive guidance about what specific areas of mathematics you need to practice.
     - You can do this at home.
   - Cons
     - It takes up to six weeks to complete.
     - It costs $33. However, you can save money on tuition and fees by not having to enroll in a lower-level mathematics course.
     - If you do not have the time or are not willing to put in significant effort, you are probably better off just taking the free math placement exam during orientation.

Website: http://math.unt.edu/academics/mathematics-placement
Our suggestions:

- Whether you have taken MyMathTest or not, you can take the Accuplacer today for free in GAB 443.
- If you take the Accuplacer (and also MyMathTest) and still do not place into your desired course, then you are strongly encouraged to purchase and complete the ALEKS placement program.

Website: [http://math.unt.edu/academics/mathematics-placement](http://math.unt.edu/academics/mathematics-placement)
Required Mathematics Courses

- **Math Core (16 hours):** Calculus (Math 1710, 1720, 2730), Linear Algebra (Math 2700), Real Analysis I (Math 3000).
- Upper-level courses are grouped into various areas: Analysis, algebra, probability & statistics, geometry/topology, and secondary teacher preparation. Exact requirements vary depending on whether the student is pursuing a BA or BS and on whether secondary teacher certification is sought.
- **Depth Requirement:** A sequence of courses in a single area.
- **Breadth Requirement:** One course from each of the areas other than secondary teacher preparation and not used to satisfy the depth requirement.
- **Theory Requirement:** Everyone must take at least one of Math 3510 (abstract algebra) or Math 3610 (Real Analysis II). Students planning to attend graduate school in math should take both.
- **Elective:** Additional math course(s) numbered 2000 or 3350 or above.
Math majors who also plan to graduate with a teaching certificate must take the following courses in fulfilling the math requirements:

- Math 2000: Discrete Mathematics (also strongly recommended for all math majors)
- Math 2100: Functions and Modelling
- Math 3680: Applied Statistics
- Math 3850: Mathematical Modeling
- Math 4050: Advanced Study of the Secondary Mathematics Curriculum
- Math 4060: Foundations of Geometry
UNT offers two introductory courses designed to help you decide if a teaching career is right for you. See the Teach North Texas hand-out for details:

- TNTX 1100: Inquiry Approaches to Teaching
- TNTX 1200: Inquiry-Based Lesson Design

or

- TNTX 1300: Inquiry-Based Lessons

The Teach North Texas program also offers scholarship and internship opportunities!
Core Curriculum

Please take a look at the orange core curriculum sheet in your folders and the core curriculum worksheet in your CAS advising book.

- Section A: Note that TECM 2700 is recommended for math majors for the **Composition II** requirement.
- Section C: Math majors have a very restricted choice of **science** courses!
- Section E: If you will be working toward the Teach North Texas minor, the required course **PHIL 2600** will satisfy the **Language, Philosophy, and Culture** requirement.
- Section H: **Social & Behavioral Sciences:**
  - Math majors may choose any course, but Economics is recommended for students without another preference.
  - For students pursuing the certificate in actuarial science, both ECON 1100 and 1110 are required.
Discovery & Capstone

- Section I: **Discovery** requirement
  - We highly recommend that you take Math 2000 as soon as possible, including concurrently with Math 1710. Math 2000 counts for both Discovery as well as for math major requirements and should prepare you for Math 3000 and other theorem-proof courses.

- Section J: Students will take their **Capstone** course toward the end of their time at UNT.
  - Teach North Texas students will satisfy this requirement with student teaching (EDSE 4618).
  - Other students should discuss their capstone options with an advisor closer to graduation.
Lab Science Requirement

For **both** the BA and BSM degrees, the following also satisfy the science portions of the University and Arts & Sciences cores.

- You must take 3 science courses for at least 11 hours.
- At least 2 must be intended for science majors, chosen from
  - BIOL 1710/1730 and BIOL 1720/1740
  - CHEM 1410/1430 and CHEM 1420/1440 (prereq: Math 1100)
  - PHYS 1710/1730 and PHYS 1720/1740 (prereq: Math 1710)
- You must take at least one physical science course: CHEM 1410/1430 and/or PHYS 1710/1730.

For the **BA** degree, you must take at least one life science course (BIOL 1710/1730 or a class intended for non-science majors).

For the **BSM** degree, you must take at least one of the above **sequences**, and a life science course is **not** required.
We recommend everyone choose classes to satisfy the BSM requirements to keep your options open. Additional options are available to double majors and geology/geography minors. In most cases, one less rigorous science class may be used in place of one of the courses below. Honors equivalents are acceptable.

**Biology Emphasis:**
- BIOL 1710/1730 and BIOL 1720/1740
- CHEM 1410/1430 or PHYS 1710/1730

**Chemistry Emphasis:**
- CHEM 1410/1430 and CHEM 1420/1440
- BIOL 1710/1730

**Physics Emphasis:**
- PHYS 1710/1730 and PHYS 2220/2240
- BIOL 1710/1730
Foreign Language Requirement

These options meet the Arts & Sciences Foreign Language Requirement

- **Bachelor of Arts**
  - Two years of foreign language (up through 2050)

- **Bachelor of Science**
  - **Option I**: One year of foreign language (up through 1020)
  - **Option II**: 2 courses in technical writing from: TECM 2700, 4180, 4190, 4250, and 4700.

Although any foreign language can be used to satisfy the foreign language requirement, we recommend the following languages:

- Students planning a graduate degree in mathematics are encouraged to study: French, German or Russian
- Students planning to teach elementary or secondary school are encouraged to study Spanish
Foreign Language Placement Testing

- For a list of dates & times when the language placement test will be given, see worldlanguages.unt.edu/resources/testing/placement
- Some information about language placement is included in your green folders.
All students must take CSCE 1010, CSCE 1020, CSCE 1030, or have consent of department.

- CSCE 1010 and 1020 are intended for students wanting to only take one programming course. (The CSE department is phasing out CSCE 1020.)
- CSCE 1030 is intended for students wanting to take more than one programming course. You may enroll in CSCE 1030 after completing MATH 1650 (Precalculus).
- Mathematics courses at the 2000 level and above may assume students have achieved this level of computer competency, so you are encouraged to take one of these courses early in your academic career.
A minor (in any subject) of at least 18 hours, at least 6 of which must be advanced.

Secondary certification, the actuarial certificate program, and double majors count as minors.
Special transcript notations indicating you have fulfilled a special set of requirements.

Somewhat like minors, but may be recorded on your transcript when requirements completed, which can be either before or after graduation.
Actuarial Science

- The study of risk and risk management.
- Originally associated primarily with the insurance industry.
- Today, people trained in actuarial science work in many different industries.
- The Mathematics Department in cooperation with the College of Business and the Department of Economics offers a “certificate program.”
- Students interested in careers applying mathematics to business and finance are encouraged to consider completing the actuarial science certificate.
- Students in this program can enroll in FINA 3770 without taking ACCT 2010/2020. See an advisor for details.
Mathematics majors who complete the three course “probability/statistics” depth sequence for their major can get an academic certificate in statistics by taking one additional class that applies statistics to another discipline.
Available to students who complete a sequence of mathematics courses useful for scientific computation plus at least one advanced science or engineering course that makes use of advanced mathematical computation.
Online Degree Audit: mydegreeaudit.unt.edu

At least one requirement is not yet satisfied:

- Legend - Description of grades and other audit values
- This catalog remains valid through August 2020. If you do not expect to complete these requirements by this date, see your advisor immediately for information on catalog options.
- ***** Advising Process Not Complete *****
- ***** Audit Not Yet Official *****

At this time, your advisor has not yet indicated that your academic record (including UNT, transfer and non-traditional credit) has been fully evaluated.

As a result, your audit should not be considered official until you receive a copy without this warning message. If you have questions, please contact your advisor.

- *** Interactive Audit Notice -- Program with Pre-Major ***
- ******** Seniors: Graduation/Advising Notice ********
- ✔ University Requirements for Degree -- UNT GPA
- ✔ University Requirements for Degree -- GPA (All Courses)
- ✗ University Reqs for Degree -- Advanced Hours (Overall)
- ✔ University Reqs for Degree -- Advanced Hours (UNT)
- ✗ University Requirements for Degree -- Total Hours -- Completion of at least 120 semester hours

Note: Completion of minimum hours required for degree does not guarantee completion of all degree requirements.
We have only discussed **minimum** requirements needed to obtain a degree. Choose your upper-level courses carefully in consultation with an advisor to ensure you choose courses that will help you attain your career goals.

- If you plan to get a job in industry after completing your Bachelor’s degree, be sure to choose some courses that will give you practical skills. It is often wise to choose your minor in a practical subject such as engineering or business.

- The catalog contains a list of courses that anyone contemplating eventually doing graduate work in mathematics should be sure to take. These courses are also denoted with stars on the yellow math course flow chart.

- A mathematics major is often excellent preparation for graduate programs in many other subjects such as engineering, economics, finance, and even law. If this is your eventual goal, choose your minor or elective courses to help prepare you for this.
Resources and Opportunities for Mathematics Majors

- The **Mathematics Tutor Lab** on the 4th floor of the GAB offers **free tutoring** to students in 1000–2000 level courses.

- The **Math Major Study Area** located inside the math lab is a nice place to study and get together with other math majors.

- You may want to join the **Math Club**, which organizes social events like picnics for math students or forums on finding summer research or internship opportunities.

- The department has some departmental **scholarships** you can apply for. These scholarships generally go to students who have completed at least Math 3000. Scholarship applications are due March 1 each year.

- Many mathematics majors are **employed** by the department as **graders**.

- More information on opportunities and resources is included in your advising folder and on the department website.
Freshmen Only: First Flight

First Flight activities begin on August 16, including a College Day presentation especially for math majors on Thursday, August 20.
Common Questions

- **How many classes should I take?**
  College is not like high school. Most learning in college takes place outside formal class time. For each hour spent in class, expect to spend 2–3 hours outside class studying and doing homework, especially for math and science classes. A 15-hour schedule will require at least 45 hours per week of work – more than a full-time job.

- **How many math classes should I take?** Not more than 2 to start. Critical transitions in expectations occur at the start of calculus, in sophomore level courses like multi-variable calculus and linear algebra, and in Math 3000 and upper-level courses. Do not take too many math courses the first semester of each of these transitions.

- **Remember, it is more important to do well in your classes than it is to take many of them all at the same time.**
Please fill-out your directory information on the “Welcome to the UNT Department of Mathematics” form.

It is important to keep this information up-to-date, particularly your e-mail address, in my.unt.edu.

You should check your EagleConnect e-mail account regularly or have e-mail from that account forwarded to an e-mail account you do check regularly. Official announcements from the university and from your course instructors are generally sent to EagleConnect accounts.
Please complete the advising survey and have it ready to turn-in.
If you are a freshman with AP or transfer credit, you should visit GAB 220 to have your transfer credit evaluated. If you do not yet know your AP scores and do not have any other transfer credit, you should wait until after you have your AP scores.

**Note:** Freshmen may not register for classes prior to their scheduled time this afternoon (maybe 2:30?).
Scheduling Priorities: Freshmen

1. Math course(s), including Math 2000 if applicable
2. TNTX 1100
3. English composition
4. Foreign language or technical writing
5. Laboratory science
6. CSCE 1010, 1020, or 1030
7. Other core
8. Minor
9. Electives
Scheduling Priorities: Transfer

1. Math course(s), including Math 2000 if applicable
2. TNTX 1100 or 1300
3. CSCE 1010, 1020, or 1030
4. Minor (or actuarial science certificate)
5. Laboratory science
6. Foreign language or technical writing
7. Other core
8. Electives
**Sample Advising Record**

**LEFT-HAND SIDE:**
- **College/School:** A&S
- **Degree:** BA or BSM
- **Major:** Math
- **Minor:** 
- **Concentration:** 

**RIGHT-HAND SIDE:**

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<th>FALL 2015</th>
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<tbody>
<tr>
<td><strong>Class Number</strong></td>
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<td>ENGL</td>
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<td>CSCE</td>
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Freshmen: Remember that you’ll need to see an adviser (either Dr. Quintanilla, Dr. Liu, or a staff adviser) in November to register for classes in the spring. Also, you’ll need to see an adviser in the spring in order to register for classes for summer and fall of next year.
Things to turn in

1. Request for degree audit (yellow, green, or pink)
2. Red advising acknowledgement (you keep one red copy)
3. Green “Welcome” form
4. Yellow copy of two-part advising record (class schedule)
5. Survey (white)

Note: Blank copies of unused requests for degree audits (yellow, green, pink) can be turned in blank for re-use by another student.

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