Graduation Requirements

<table>
<thead>
<tr>
<th>Academic level</th>
<th>Required GPA</th>
<th>Actual GPA</th>
<th>GPA Status</th>
<th>Requirement Term</th>
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<tbody>
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<td>Fall 2022</td>
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<td>Mathematics Major (BS)</td>
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<tr>
<th>Unit Requirements</th>
<th>Required Units</th>
<th>Total Units *</th>
<th>In Progress Units</th>
<th>Unit Status</th>
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<tbody>
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<td>Units Required for this Degree</td>
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<td>Units in Residence</td>
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<td>Upper Division Units in Residence</td>
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<td>0.000</td>
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*Total Units and Requirement Status include In Progress Units. In Progress Units are comprised of all ungraded coursework, including future enrollments. Credit from repeated courses is excluded from the In Progress and Total Units unless the student has filed a Grade Replacement Opportunity (GRO) request. If a GRO request has been filed the GRO units will be excluded when the course is graded. Credit from developmental courses (e.g. MATH/SAS 100AX) is only temporarily included in the In Progress and Total Units and will also be excluded when graded. Note: Credit for a course can only be given once, unless otherwise specified in the course catalog.

Credit Type – EN=Enrollment at UA, IP=In Progress, TR=Transfer Credit, TE=Test Credit

Undergraduate Graduation Requirements

All course work and requirements for this degree must be completed prior to the date the degree is awarded. The University of Arizona requirements to follow in this audit are required for graduation and awarding of the degree.

Curriculum:
1. The University of Arizona and the Arizona Board of Regents have sole discretion over all curricula changes.
2. Courses, programs & requirements may be suspended, deleted, restricted, or changed in any manner, at any time.
3. Students must remain currently informed about all policies & other info that bears on completing a degree.

Required Units:
Additional units will be required to complete this degree if a student:
A) is admitted to the UA with deficiencies;
B) changes their academic plan(s);
C) fails to meet minimum course/plan requirements;
D) ineffectively plans or fails to execute a course of study that leads directly to degree completion; or
E) Candidates for a second bachelor's degree at The University of Arizona with a different award date than the first must earn no fewer than 30 units of University Credit in addition to the units required for the first degree, and must meet all requirements for the second degree.

Correspondence and/or Exam Credit Limit

Satisfied: A maximum of 60 units of Correspondence Credit and/or Exam Credit may apply toward graduation.

- Units: 0.00 completed

Non Degree Seeking Limit

A maximum of 15 units completed as a non-degree seeking student may be used for fulfilling undergraduate degree requirements.
Units exceeding this limit (shown below) must be subtracted from the units required towards the degree and graduation requirements.
Non-Community College Units

Not Satisfied: Non-Community College Units: While there is no limit to the total number of units of course work that may be transferred from an accredited community college to The University of Arizona, no more than 64 units from a 2-year institution may be applied toward the requirements for a bachelor's degree. Therefore, to reach the required 120 units for a bachelor's degree, a minimum of 56 units must be completed from 1) coursework at a 4-year institution, 2) approved credit by examination (refer to UA Catalog for approved examinations and scores), or 3) any combination thereof.

- Units: 56.00 required, 0.00 completed, 56.00 needed

Success Course Limit

Satisfied: No more than 3 units will apply toward a student's graduation requirements. All Success courses taken can be seen below. Success Course units exceeding the 3 unit maximum must be subtracted from the total units, residency requirements and cumulative grade point average.

PE Activity Course Limit

Satisfied: No more than 3 units will apply toward a student's graduation requirements. All PE activity courses taken can be seen below. PE Activity units exceeding the 3 unit maximum must be subtracted from the total units, residency requirements and cumulative grade point average.

General Education Entry Course

Not Satisfied: General Education Entry Course

Introduction to General Education course

Not Satisfied: Introduces students admitted to the university as First-Year students to General Education, reflecting on learning, and developing an ePortfolio. (1 unit)

- Units: 1.00 required, 0.00 completed, 1.00 needed

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<tr>
<th>Term</th>
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</thead>
</table>

Courses Available

UNIV 101

General Education Foundation Mathematics

Not Satisfied: General Education Foundation Mathematics

GE Substantial Math Strand

Not Satisfied: Complete 1 course.

GE Substantial Math Strand

Not Satisfied: Complete 1 course.
· Units: 2.67 required, 0.00 completed, 2.67 needed

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</thead>
</table>

**Courses Available**

MATH 122B, MATH 125, MATH 129, MATH 215, MATH 223, MATH 254, MATH 313

**General Education Foundation Composition & Second Language**

*Not Satisfied:* Undergraduate General Education Foundation Composition & Second Language

**Foundation Composition**

*Not Satisfied:* Complete 1 of the following 4 Foundation Composition options:
1. 3 Course Foundation Composition Sequence
2. 2 Course Foundation Composition Sequence
3. Honors Composition with grade of C or higher
4. Honors Composition with a grade of D and Second Semester Composition.

Please note: Students who earn a grade of D in Honors Composition may choose to repeat the course in order to earn a higher grade to satisfy the requirement. Please consult with your major advisor.

Mid-Career Writing Assessment - Complete 2nd semester English Composition with a B grade or higher. Students who do not earn a grade of B or better in 2nd semester English Composition must also satisfy a college or department writing requirement. Consult your major advisor if you do not earn a grade of B in 2nd semester English Composition.

**Option 1: Foundation Composition - 3 Course Sequence**


· **Courses:** 3.00 required, 0.00 completed, 3.00 needed

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</table>

**Courses Available**

ENGL 1EIB, ENGL 101, ENGL 101A, ENGL 107, ENGL 107A, (***) (###), ENGL 102, ENGL 108, ENGL 106

**OR Option 2: Foundation Composition - 2 Course Sequence**

*Not Satisfied:* Complete 2 courses. Complete ENGL 101/107 AND ENGL 102/108

· **Courses:** 2.00 required, 0.00 completed, 2.00 needed

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<tr>
<th>Term</th>
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</table>

**Courses Available**

ENGL 1EIB, ENGL 101, ENGL 101A, ENGL 107, ENGL 107A, (***) (###), ENGL 102, ENGL 108

**OR Option 3: Honors Composition**

*Not Satisfied:* Complete 1 course with a C or better.
Courses: 1.00 required, 0.00 completed, 1.00 needed

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</table>

Courses Available

ENGL 109H

Foundation Second Language - Second Semester Proficiency

**Not Satisfied:** Credit will not be given for a course at an equivalent or lower level than prior language credit earned. Course must be taken for a grade, not as pass/fail. Third semester or higher courses used to fulfill this requirement may also be used to fulfill other requirements. A grade of C or higher is required in the course that satisfies the second language requirement.

Demonstrate second semester proficiency in a second language by completing a sequence of courses through a second semester or higher level or by passing a language proficiency examination at the second semester level or higher.

Second Semester Language Course

**Not Satisfied:** Complete 1 course with a grade of C or better.


Courses: 1.00 required, 0.00 completed, 1.00 needed

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</table>

Courses Available

AIS 104B, AIS 307B, ARB 102, CHN 102, CRL 102, FREN 102, FREN 112, GER 102, GRK 102, GRK 104, GRK 112, ITAL 102, ITAL 102Z, JPN 102, JUS 103B, KOR 102, LAS 305A, LAT 102, LAT 112, LING 104B, LING 307B, MENA 103B, PORT 102, PORT 305A, PORT 325A, PRS 102, RSSS 102, SERP 370B, SPAN 102, SPAN 103, SPAN 205, TURK 102

General Education Core Requirements

**Not Satisfied:** General Education Core Requirements

GE Exploring Perspectives

**Not Satisfied:** Choose one course from each domain.

**Art**

**Not Satisfied:** Complete 1 course, 3 units total. Transfer students with quarter system credits may satisfy requirement with 1 course and 2.67 units.

- **Units:** 2.67 required, 0.00 completed, 2.67 needed
- **Courses:** 1.00 required, 0.00 completed, 1.00 needed
Courses Available

ART 242, ART 358, DNC 100, ENGL 209, FTV 352, MUS 109, (***) (###)

Humanist

Not Satisfied: Complete 1 course, 3 units total. Transfer students with quarter system credits may satisfy requirement with 1 course and 2.67 units.

- Units: 2.67 required, 0.00 completed, 2.67 needed
- Courses: 1.00 required, 0.00 completed, 1.00 needed

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</table>

Courses Available

AFAS 160A1, AIS 212, ENGL 160D2, HIST 160C1, RELI 212, RELI 325, RSSS 160C2, RSSS 325, (***) (###)

Natural Scientist

Not Satisfied: Complete 1 course, 3 units total. Transfer students with quarter system credits may satisfy requirement with 1 course and 2.67 units.

- Units: 2.67 required, 0.00 completed, 2.67 needed
- Courses: 1.00 required, 0.00 completed, 1.00 needed

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Courses Available

BE 170A1, CHEM 151, CHEM 152, CHEM 161, CHEM 162, ECOL 170C2, GEOG 230, GEOS 170A1, (***) (###)

Social Scientist

Not Satisfied: Complete 1 course, 3 units total. Transfer students with quarter system credits may satisfy requirement with 1 course and 2.67 units.

- Units: 2.67 required, 0.00 completed, 2.67 needed
- Courses: 1.00 required, 0.00 completed, 1.00 needed

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</table>

Courses Available

ANTH 339, ECON 200, LAS 150B1, PSY 150A1, SERP 200, TLS 150B1, (***) (###)

GE Building Connections

Not Satisfied: Building Connections brings together knowledge and modes of thinking from two or more disciplines and/or perspectives. Choose three courses (9 units minimum).

Building Connections

Not Satisfied: Complete 3 courses, 9 units total. Transfer students with quarter system credits may satisfy requirements with 3 courses and 8.01 units.

- Units: 8.01 required, 0.00 completed, 8.01 needed

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</table>
- **Courses**: 3.00 required, 0.00 completed, 3.00 needed

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</table>

**Courses Available**

ACBS 160D1, ARC 160D1, ART 360, CLAS 150C1, CLAS 305, CLAS 346, ENVS 310, GER 150B1, GER 160A1, GWS 150B2, HNRS 160D4, HNRS 170A1, HPS 150C1, HUMS 205, LAR 150B1, LAW 360, LING 150A1, PSY 240, RELI 305, RELI 367, RNR 150C1, (***) (###)

**GE 32 unit check**

**Not Satisfied**: Students must complete 32 units in General Education coursework while satisfying the requirements.

Check for 32 units of GE.

**Not Satisfied**: Students must complete 32 units in General Education coursework while satisfying the requirements.

- **Units**: 32.00 required, 0.00 completed, 32.00 needed

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</table>

**General Education Portfolio**

**Not Satisfied**: General Education Portfolio (Exit Course)

**General Education Portfolio**

**Not Satisfied**: Students admitted to the university as First-Year students reflect on their General Education experience and complete their ePortfolio in the GE Capstone course. (1 unit)

- **Units**: 1.00 required, 0.00 completed, 1.00 needed

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**Courses Available**

UNIV 301

**Additional Coursework**

Courses listed in this section may include general elective credits, UA courses and transferable courses from other institutions. Consult with your advisor to determine if courses listed in this section may be used to fulfill a requirement or sub-requirement in your
degree program.

Courses taken for Pass/Fail option can only count as elective credit. They cannot fulfill any General Education, Major, or Minor requirements.

### BS in Mathematics

**Not Satisfied:** Will appear fully satisfied when student satisfies Mathematics Supporting Laboratory Science Coursework, Mathematics Application Coursework, Mathematics Computer Science, Math Major Core Requirements, and selects an emphasis. All emphases require a minimum of 15 units of 400-level coursework in the major.

The Bachelor of Science in Mathematics requires the same Core Mathematics courses as the BA; BS students must satisfy specialized supporting laboratory science and application course requirements. Equivalent MATV courses may be available through UA South. For approved courses consult with your advisor.

### Mathematics Supporting Laboratory Science Coursework

**Not Satisfied:** Will appear fully satisfied when student has satisfied two of the approved laboratory science courses.

Students seeking a BS in Mathematics must complete 2 of the following requirements. Choose from Chemistry, Physics, Biology, Physiology, and/or Geosciences.

Courses used to fulfill this requirement may also be used to fulfill other requirements.

#### Chemistry I

**Not Satisfied:** Complete 4 units from Chemistry 141 & 143, 151, 161 & 163

- **Units:** 4.00 required, 0.00 completed, 4.00 needed

<table>
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<tr>
<th>Term</th>
<th>Subject</th>
<th>Catalog Nbr</th>
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<th>Grade</th>
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</table>

**Courses Available**

CHEM 141, CHEM 143, CHEM 151, CHEM 161, CHEM 163, Approved Transfer Course

#### Chemistry II

**Not Satisfied:** Complete 4 units from Chemistry 142 & 144, 152, 162 & 164

- **Units:** 4.00 required, 0.00 completed, 4.00 needed

<table>
<thead>
<tr>
<th>Term</th>
<th>Subject</th>
<th>Catalog Nbr</th>
<th>Course Title</th>
<th>Grade</th>
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</table>

**Courses Available**

CHEM 142, CHEM 144, CHEM 152, CHEM 162, CHEM 164, Approved Transfer Course

#### Geosciences

**Not Satisfied:** Complete 1 course

- **Courses:** 1.00 required, 0.00 completed, 1.00 needed
<table>
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<tr>
<th>Term</th>
<th>Subject</th>
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<th>Course Title</th>
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</table>

**Courses Available**

GEOS 251

Geosciences

*Not Satisfied*: Complete 1 course

- **Courses**: 1.00 required, 0.00 completed, 1.00 needed

<table>
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<tr>
<th>Term</th>
<th>Subject</th>
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<th>Course Title</th>
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**Courses Available**

GEOS 255, GEOS 302, GEOS 304, GEOS 308, GEOS 322

Biology I

*Not Satisfied*: Complete 4 units

- **Units**: 4.00 required, 0.00 completed, 4.00 needed

<table>
<thead>
<tr>
<th>Term</th>
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**Courses Available**

MCB 181L, MCB 181R, Approved Transfer Course, MCB 184

Biology II

*Not Satisfied*: Complete 4 units

- **Units**: 4.00 required, 0.00 completed, 4.00 needed

<table>
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<tr>
<th>Term</th>
<th>Subject</th>
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<tr>
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**Courses Available**

ECOL 182L, ECOL 182R, Approved Transfer Course

Physiology I

*Not Satisfied*: Complete 1 course

- **Courses**: 1.00 required, 0.00 completed, 1.00 needed

<table>
<thead>
<tr>
<th>Term</th>
<th>Subject</th>
<th>Catalog Nbr</th>
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</table>
**Courses Available**

**PSIO 201**

*Physiology II*

Not Satisfied: Complete 1 course

- Courses: 1.00 required, 0.00 completed, 1.00 needed

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<th>Term</th>
<th>Subject</th>
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**Courses Available**

**PSIO 202**

*Introductory Mechanics*  

Not Satisfied: Complete Introductory Mechanics Lecture with Lab

- Units: 4.00 required, 0.00 completed, 4.00 needed

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**Courses Available**

**PHYS 139, PHYS 140, PHYS 141, PHYS 161H**

*Intro Optics and Thermodynamics*  

Not Satisfied: Complete Introductory Thermodynamics & Optics with Lab

- Courses: 1.00 required, 0.00 completed, 1.00 needed

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<td>PHYS</td>
<td>139, 140, 141, 161H</td>
<td>Intro Optics and Thermodynamics</td>
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**Courses Available**

**PHYS 142, PHYS 162H**

*Introductory Electricity and Magnetism with Lab*  

Not Satisfied: Complete Introductory Electricity and Magnetism with Lab

- Units: 4.00 required, 0.00 completed, 4.00 needed

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<td>PHYS</td>
<td>142, 162H</td>
<td>Introductory Electricity and Magnetism with Lab</td>
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Courses Available

PHYS 239, PHYS 240, PHYS 241, PHYS 261H

Mathematics Application Coursework

**Not Satisfied:** Will appear fully satisfied when student has satisfied 3 units of non-math coursework with a prerequisite or corequisite of at least Calculus I (MATH 122B or higher).

Courses used to fulfill this requirement may also be used to fulfill other requirements.

This requirement does not apply to the Mathematics Education Emphasis.

Courses with Calculus Prerequisite

**Not Satisfied:** Consult with the advisor to discuss approved courses. Up to 3 units of internship credit (MATH 493) may apply to the application course requirement.

- **Units:** 3.00 required, 0.00 completed, 3.00 needed

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Mathematics Supporting Computer Science

**Not Satisfied:** Will appear fully satisfied when student satisfies Computer Science requirements.

Computer Science

**Not Satisfied:** Complete 1 course. One of the following courses is recommended for most students: CSC 110, ISTA 130, ECE 175, or CHEE 205; other options may require additional prerequisites and/or a major or minor declared in another subject.

Courses used to fulfill this requirement may also be used to fulfill other requirements.

- **Courses:** 1.00 required, 0.00 completed, 1.00 needed

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Math Major Core Requirements

**Not Satisfied:** Will appear fully satisfied when student satisfies Calculus I and other Core Courses.

Calculus I

(Courses Available)

CSC 110, CSC 120, CSC 250, ISTA 130, CEE 205
**Not Satisfied:** Complete 1 course

- **Courses:** 1.00 required, 0.00 completed, 1.00 needed

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**Courses Available**

- MATH 122B, MATH 125

**Core Courses**

- **Not Satisfied:** Complete 5 courses. Credit allowed for only one course in each pair: MATH 313 or MATV 313, MATH 323 or MATV 323, MATH 355 or MATV 355. MATV courses are only available to UA South students.

- **Courses:** 5.00 required, 0.00 completed, 5.00 needed

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**Courses Available**

- MATH 129, MATH 223, MATH 313, MATH 323, MATH 355, MATV 313, MATV 323, MATV 355

**Emphasis in Applied Mathematics**

- **Not Satisfied:** Will appear fully satisfied when student satisfies Applied Emphasis course requirements, Graduation Requirements, and declares a minor.

Equivalent MATV courses may be available through UA South. For approved courses consult with your advisor.

**Applied Emphasis Options**

- **Not Satisfied:** Will appear fully satisfied when student satisfies Option 1, 2, OR 3.

**Option 1: Differential Equations**

- **Not Satisfied:** Complete Math 454 and 456

- **Courses:** 2.00 required, 0.00 completed, 2.00 needed

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**Courses Available**

- MATH 454, MATH 456

**OR Option 2: Probability and Statistics**

- **Not Satisfied:** OR Complete Math 464 and 466

- **Courses:** 2.00 required, 0.00 completed, 2.00 needed

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**Courses Available**

- MATH 464, MATH 466

**OR Option 3: Numerical Analysis** *(R16646/L40)*

- **Not Satisfied:** OR Complete Math 475A and one course from the list below
  - **Courses:** 1.00 required, 0.00 completed, 1.00 needed

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**Courses Available**

- MATH 475A

**AND Option 3: Courses to Pair With Numerical Analysis** *(R16646/L50)*

- **Not Satisfied:** Complete MATH 475A and one course from MATH 413, 424, 443, 445, 447, 454, 456, 464, 475B
  - **Courses:** 1.00 required, 0.00 completed, 1.00 needed

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<td>413, MATH 424, MATH 443, MATH 445, MATH 447, MATH 454, MATH 456, MATH 464, MATH 475B</td>
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**Applied Emphasis Requirements** *(R1180)*

- **Not Satisfied:** Will appear fully satisfied when student satisfies the Required Applied Modeling course, the Applied required courses, and one advisor approved course.

**Required Applied Math Modeling Course** *(R1180/L10)*

- **Not Satisfied:** Complete 1 course.
  - **Courses:** 1.00 required, 0.00 completed, 1.00 needed

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**Applied Required Course** *(R1180/L15)*

- **Not Satisfied:** Complete 1 course.
  - **Courses:** 1.00 required, 0.00 completed, 1.00 needed
### Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type
---|---|---|---|---|---|---|---|---

**Courses Available**

MATH 422

**Additional Course**

Not Satisfied: Complete one 400-level MATH course in consultation with your math faculty advisor. You may choose from the pre-approved list. If you prefer to select another course, you may do so ONLY if approved by your math faculty advisor.

- Units: 3.00 required, 0.00 completed, 3.00 needed

### Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type
---|---|---|---|---|---|---|---|---

**Courses Available**

DATA 468, MATH 413, MATH 424, MATH 454, MATH 456, MATH 464, MATH 468, MATH 475A, MATH 481, MATH 485, MATH 488

**Major 400-level Upper Division**

Not Satisfied: A minimum of 15 units of 400-level upper-division major coursework must be completed.

- Units: 15.00 required, 0.00 completed, 15.00 needed

### Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type
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**Applied Emphasis Graduation Requirements**

Not Satisfied: Will appear fully satisfied when student satisfies Mid Career Writing Assessment, Major GPA, Residency requirement, and Major Upper Division unit requirement.

**Mid Career Writing Assessment**

Not Satisfied: Complete 2nd semester English Composition with a B grade or higher. Students who do not earn a grade of B or higher in 2nd semester English Composition must also satisfy a college or department writing requirement. Consult your major advisor if you do not earn a grade of B or higher in 2nd semester English Composition.

- Courses: 1.00 required, 0.00 completed, 1.00 needed

### Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type
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**Major GPA**

Satisfied: A minimum 2.0 GPA is required in the major coursework.

- GPA: 2.000 required, 0.000 completed
Major Units

Not Satisfied: A minimum of 34 units must be completed in the major.

- Units: 34.00 required, 0.00 completed, 34.00 needed

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Major Residency

Not Satisfied: A minimum of 18 units in the major must be taken at the University of Arizona.

- Units: 18.00 required, 0.00 completed, 18.00 needed

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Major Upper Division

Not Satisfied: A minimum of 18 units of upper-division major coursework must be completed.

- Units: 18.00 required, 0.00 completed, 18.00 needed

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Minor Required

Not Satisfied: A minor outside of the Mathematics Department is required for this major. Consult with your advisor to select a minor or discuss other options such as selecting a second major.