

## Academic Advisement Report

UGRD.USCNC.MATHBS.APPL

Undergraduate Career

College of Science Program

Mathematics Major (BS)

Applied Emphasis

Requirement Term: Fall 2018

### MAIN Campus at TUCSON Location

This emphasis is for students who intend to enter the job market upon graduation, but may also be appropriate for students who plan to go on to graduate school in a field of science or engineering. Applied emphasis coursework focuses on skills like mathematical modeling rather than proof writing, to prepare students to use mathematics in a variety of settings.

## Undergraduate Graduation Requirements

(RG511)

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 his/her 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.

The following requirements must be met for graduation.

### Units Required and Cumulative GPA

(R2903/L10)

120 units are required at a 2.0 GPA. View the pdf report grid for units earned toward this degree and cumulative GPA.

Completing a second bachelor's degree at The University of Arizona requires no fewer than 30 units in addition to the units required for the first degree, and all requirements for the second degree must be met.

### Upper Division Units

(R538/L40)

**Not Satisfied:** A minimum of 42 units of upper-division credit are required for this degree.

· **Units:** 42.00 required, 0.00 completed, 42.00 needed

### Units in Residence

(R538/L60)

**Not Satisfied:** A minimum of 30 units in residence at The University of Arizona (excluding correspondence credit and credit by exam) is required.

· **Units:** 30.00 required, 0.00 completed, 30.00 needed

### Final Units in Residence

(R538/L70)

A minimum of 18 of the final 30 units taken toward degree requirements must be in residence at The University of Arizona. Consult with your academic advisor if you plan to use transfer credits to fulfill your degree requirements.

### Correspondence and/or Exam Credit Limit

(R2075/L10)

**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

(R838/L10)

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.

Community College Limit

(R1227/L10)

**Not Satisfied:** A maximum of 64 units of community college course work may apply toward graduation. A minimum of 56 units of course work must be completed at a 4-year institution, military institution, or as test credit.

· **Units:** 56.00 required, 0.00 completed, 56.00 needed

Success Course Limit

(R3297/L15)

**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

(R3297/L25)

**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.

**Foundation Mathematics**

(RG1434)

**Not Satisfied:** Foundation Mathematics

GE Substantial Math Strand

(R2612)

**Not Satisfied:** Complete 1 course.

GE Substantial Math Strand

(R2612/L10)

**Not Satisfied:** Complete 1 course.

· **Units:** 2.67 required, 0.00 completed, 2.67 needed

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

**Courses Available**

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

**Undergraduate General Education and Foundation Requirements**

(RG507)

**Overall Requirement Not Satisfied:** Undergraduate General Education and Foundation Requirements

Foundation Composition

(R532)

**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

(R532/L10)

**Not Satisfied:** Complete 3 courses. Complete ENGL 106 AND ENGL 101/107 AND ENGL 102/108.

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

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

Courses Available

ENGL 101, ENGL 101A, ENGL 107, ENGL 107A, ENGL 102, ENGL 108, ENGL 106

OR Option 2: Foundation Composition - 2 Course Sequence

(R532/L20)

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

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

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

Courses Available

ENGL 101, ENGL 101A, ENGL 107, ENGL 107A, ENGL 102, ENGL 108

OR Option 3: Honors Composition

(R532/L40)

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

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

| Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      | ENGL    | 109H        |              |       |       |       |       |      |

**Courses Available**

ENGL 109H

**Foundation Second Language - Second Semester Proficiency** (R521)

**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** (R521/L10)

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

Not from: FREN 325, 391, 393, 396H, 399, 399H, 414, 425, 432, 433, 434, 442, 443, 448, 453, GRK 412, 422, HIST 465D, ITAL 330A, 330B, 330C, 330D, 393, 393H 399, 399H, 410, 431, 496A, 498H, LAT 411, 413, 414, 415, 421, 425, 426, PORT 325A, 430, 440, 449, RSSS 305, 405A, 405B, SPAN 204C, 303, 305, 340, 343, 350, 360, 371A 371B 375, 381, 382, 397W, 399, 400, 401, 402, 403, 406A, 410, 411, 412, 414, 423A, 423B, 433, 435, 436, 437, 438, 441, 442, 445, 446, 447, 448, 452, 453, 455A, 457, 458, 459, 465A, 465C, 465D, 465E, 471, 472, 473, 482, TTE 414.

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

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

**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, 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 Tier I** (R522)

**Overall Requirement Not Satisfied:** Complete each of the following areas.

**Tier I Individuals & Societies** (R522/L10)

**Not Satisfied:** Complete 2 courses, 6 units total. Transfer students with quarter system credits may satisfy Tier One requirements with 2 courses and 5.34 units.

· **Units:** 5.34 required, 0.00 completed, 5.34 needed  
 · **Courses:** 2.00 required, 0.00 completed, 2.00 needed

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

**Courses Available**

(\*\*\*) (###), AFAS 150B1, ANTH 150B1, ART 150B1, ART 150B2, EDP 150B1, ENGL 150B1, ESOC 150B1, FREN 150B1, FSHD 150B1, FTV 150B1, GEOG 150B1, GEOG 150B2, GER 150B1, GWS 150B1, GWS 150B2, GWS 150B3, GWS 150B4, GWS 150B5, HNRS 150B1, HNRS 150B2, HUMS 150B1, ITAL 150B1, LAR 150B1, LAS 150B1, MAS 150B1, MAS 150B2, MIS 150B1, PA 150B1, PHIL 150B1, POL 150B1, RCSC 150B1, RCSC 150B2, RELI 150B1, RSSS 150B1, RSSS 150B2, SOC 150B1, SOC 150B2, SPAN 150B1, SPAN 150B2, TLS 150B1, AED 150A1, ANTH 150A1, ART 150A1, GER 150A1, HWRS 150A1, LING 150A1, MIS 150A1, PAH 150A1, PHIL 150A1, POL 150A1, PSY 150A1, AED 150C1, AREC 150C1, AREC 150C2, AREC 150C3, ECON 150C1, GEOG 150C1, HIST 150C1, HIST 150C2, HIST 150C3, HIST 150C4, HIST 150C5, HIST 150C6, HNRS 150C1, HPS 150C1, JOUR 150C1, MAS 150C1, MENA 150C1, NSC 150C1, PHIL 150C1, PLP 150C1, POL 150C1, POL 150C2, POL 150C3, RNR 150C1, SOC 150C1, SOC 150C2,

TLS 150C1

Tier I Traditions & Cultures

(R522/L30)

**Not Satisfied:** Complete 2 courses, 6 units total. Transfer students with quarter system credits may satisfy Tier One requirements with 2 courses and 5.34 units.

- **Units:** 5.34 required, 0.00 completed, 5.34 needed
- **Courses:** 2.00 required, 0.00 completed, 2.00 needed

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

**Courses Available**

(\*\*\*) (###), AFAS 160A1, AFAS 160A2, AIS 160A1, ANTH 160A1, ANTH 160A2, ART 160A1, EAS 160A1, EAS 160A2, EAS 160A3, EAS 160A4, EAS 160A5, ENGL 160A1, ENGL 160A2, FREN 160A1, GER 160A1, HIST 160A1, HIST 160A2, MAS 160A1, MENA 160A1, MENA 160A2, MENA 160A3, POL 160A1, RELI 160A1, CLAS 160B1, DNC 160B1, ENGL 160B1, HIST 160B1, HIST 160B2, ITAL 160B1, POL 160B1, ARC 160C1, DNC 160C1, ENGL 160C1, GER 160C1, GWS 160C1, HIST 160C1, POL 160C1, POL 160C1, RSSS 160C1, RSSS 160C2, SPAN 160C1, ACBS 160D1, AFAS 160D1, ANTH 160D2, ANTH 160D3, ARC 160D1, ART 160D1, ART 160D2, ART 160D3, CLAS 160D1, CLAS 160D2, CLAS 160D3, ENGL 160D1, ENGL 160D2, ENTO 160D1, GER 160D1, HNRS 160D1, HNRS 160D2, HNRS 160D3, HNRS 160D4, JUS 160D1, MUS 160D1, PHIL 160D1, PHIL 160D2, PHIL 160D3, POL 160D1, RELI 160D1, RELI 160D2, RELI 160D3, RELI 160D4, RNR 160D1, RSSS 160D1, SPAN 160D1, TAR 160D1

General Education Tier II

(R528)

**Overall Requirement Not Satisfied:** Complete each of the following areas.

Tier II Arts

(R528/L10)

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

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

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

**Courses Available**

AFAS 218, AFAS 318, AFAS 371, ANTH 318, ARC 304, ARC 325, ARE 130, ARH 201, ARH 202, ARH 203, ARH 312, ARH 314, ARH 315, ARH 316A, ARH 316B, ARH 319, ARH 320, ARH 321, ARH 322, ARH 324, ARH 325, ARH 329, ART 203, ART 242, ART 329, ART 358, CLAS 310, CLAS 329, DNC 100, DNC 101, DNC 112A, DNC 112B, DNC 112C, DNC 143, DNC 144A, DNC 144B, DNC 144C, DNC 152A, DNC 152B, DNC 152C, DNC 175, DNC 176A, DNC 176B, DNC 177C, DNC 177D, DNC 200, DNC 276A, ENGL 201, ENGL 209, ENGL 210, ENGL 300, ENGV 300, FTV 252, FTV 375, HNRS 203H, HNRS 216, HNRS 218, HNRS 220, HNRS 222, ISTA 301, JPN 245, LAS 322, LAS 337, MAS 337, MUS 100, MUS 101A, MUS 107, MUS 108, MUS 109, MUS 206, MUS 231, MUS 328, MUS 334, MUS 337, MUS 344, MUS 360, RELI 227, RELI 345, TAR 100, TAR 103, (\*\*\*) (###)

Tier II Humanities

(R528/L20)

**Not Satisfied:** Complete 1 course, 3 units total. Transfer students with quarter system credits may satisfy Tier Two requirements with 2.67 units. Prerequisite course work in Tier 1 Traditions and Cultures (TRAD) must be completed prior to taking. If LAT 201 or 202 are used to fulfill Foundation Second Language Proficiency, they cannot be used to fulfill Tier II Humanities.

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



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

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

**Courses Available**

AED 408, AFAS 150B1, AFAS 160A1, AFAS 160A2, AFAS 218, AFAS 220, AFAS 222, AFAS 223, AFAS 230, AFAS 245, AFAS 249, AFAS 255, AFAS 260, AFAS 302, AFAS 304A, AFAS 304B, AFAS 306, AFAS 310, AFAS 311D, AFAS 314, AFAS 318, AFAS 330, AFAS 340, AFAS 342, AFAS 345, AFAS 365, AFAS 371, AFAS 373, AFAS 374, AFAS 376, AFAS 377, AFAS 381, AFAS 444, AFAS 467, AFAS 468, AIS 160A1, AIS 200, AIS 210, AIS 212, AIS 220, AIS 346, AIS 347, AIS 381, AIS 467, ANTH 150A1, ANTH 160A1, ANTH 160A2, ANTH 202, ANTH 203, ANTH 220, ANTH 222, ANTH 307, ANTH 314, ANTH 318, ANTH 320, ANTH 325, ANTH 330, ANTH 346, ANTH 347, ANTH 358, ANTH 375, ANTH 402, ANTH 450, ANTH 467, ANTV 307, ANTV 375, ARH 203, ART 160A1, CHN 245, CHN 251, CHN 276, CHN 331, CHN 340, CHN 341, CHN 345, CHN 419, CHN 420, CHN 429, CHN 468, CHN 482, CHN 483, CHS 202, CLAS 362, DNC 177C, DNC 177D, EAS 130, EAS 160A1, EAS 160A2, EAS 160A3, EAS 160A4, EAS 160A5, EAS 280, EAS 333, EAS 358, EAS 484A, EAS 484B, EAS 496C, ENGL 160A1, ENGL 229, ENGL 230, ENGL 245, ENGL 342, ENGL 377, ENGL 429, ENVS 310, FREN 150B1, FREN 160A1, FREN 230, FREN 245, FREN 249, FREN 314, FREN 373, FREN 374, FTV 150B1, FTV 251, GEOG 205, GEOG 210, GEOG 251, GEOG 252, GEOG 311D, GEOG 311E, GER 160A1, GER 274, GER 278, GER 373, GER 376, GWS 200, GWS 240, GWS 253, GWS 254, GWS 260, GWS 306, GWS 323, GWS 324, GWS 328, GWS 330, GWS 335, GWS 342, GWS 362, GWS 373, GWS 402, GWS 427, GWS 448, GWS 459, GWS 468, HIST 160A1, HIST 160A2, HIST 253, HIST 254, HIST 272, HIST 276, HIST 277A, HIST 278, HIST 306, HIST 370A, HIST 370B, HIST 372A, HIST 372B, HIST 482, HNRS 160D4, HNRS 204H, HPS 387, HPS 444, HUMS 150B1, HUMS 376, ITAL 150B1, ITAL 330B, ITAL 330D, JOUR 360, JPN 220, JPN 245, JPN 272, JPN 304, JPN 310, JPN 311, JPN 402, JPN 411, JPN 412, JPN 446A, JPN 446B, JPN 447A, JPN 447B, JPN 485, JPN 486, JPN 489, JPN 495B, JPN 496A, JPN 496C, JUS 325, JUS 370A, JUS 370B, JUS 372A, JUS 372B, JUS 376, LAS 251, LAS 310, LAS 337, LAS 345, LAS 362, LAW 389, LING 210, LING 304, LING 330, LING 402, LING 411, LING 412, LING 419, LING 420, LING 496C, MAS 160A1, MAS 265, MAS 330, MAS 332, MAS 337, MAS 365, MAS 467, MENA 160A1, MENA 160A2, MENA 160A3, MENA 251, MENA 277A, MENA 311E, MENA 330, MENA 334, MENA 372A, MENA 372B, MENA 375, MENA 441, MIS 150B1, MUS 109, MUS 231, MUS 334, MUS 337, MUS 344, NESV 334, NESV 375, PHIL 222, PHIL 223, PHIL 325, PHIL 330, POL 160A1, POL 330, POL 332, POL 335, POL 345, POL 441, POL 464, POL 468, POL 476, RELI 130, RELI 160A1, RELI 160D4, RELI 210, RELI 212, RELI 220, RELI 230, RELI 235, RELI 277A, RELI 323, RELI 324, RELI 331, RELI 333, RELI 334, RELI 345, RELI 350, RELI 358, RELI 360, RELI 363, RELI 367, RELI 370A, RELI 370B, RELI 372A, RELI 372B, RELI 381, RELI 483, RELI 484A, RELI 484B, RELI 485, RELI 486, RELI 489, RELV 334, RSSS 150B2, RSSS 315, RSSS 328, RSSS 350, SOC 202, SOC 220, SOC 222, SOC 260, SOC 280, SOC 324, SOC 325, SOC 355, SOC 357, SOC 362, SOC 427, SOC 432, SOC 448, SOC 450, SOC 459, SOC 467, SPAN 150B1, SPAN 150B2, SPAN 210, TLS 150C1

**Additional Coursework** (RG521)

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** (RG772)

**Overall Requirement Not Satisfied:** Will appear fully satisfied when student satisfies Mathematics Supporting Laboratory Science Sequence, Mathematics Application Courses, 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 instead of general education courses in Natural Science.

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

**Mathematics Supporting Laboratory Science Sequence** (R1192)

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

BS students must complete a two-semester sequence in a laboratory science: choose from Chemistry, Physics, Biology,

Physiology, or Geosciences.

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

Option 1: Chemistry I

(R1192/L2)

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

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

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

**Courses Available**

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

AND Option 1: Chemistry II

(R1192/L5)

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

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

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

**Courses Available**

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

OR Option 2: Geosciences

(R1192/L10)

**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 |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      | GEOS    | 251         |              |       |       |       |       |      |
|      |         |             |              |       |       |       |       |      |

**Courses Available**

GEOS 251

AND Option 2: Geosciences

(R1192/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**

GEOS 302, GEOS 304

OR Option 3: Biology

(R1192/L20)

**Not Satisfied:** OR Complete 8 units

· **Units:** 8.00 required, 0.00 completed, 8.00 needed

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

**Courses Available**

MCB 181L, MCB 181R, Approved Transfer Course, MCB 184, ECOL 182L, ECOL 182R

OR Option 4: Physiology

(R1192/L27)

**Not Satisfied:** Complete 2 courses

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

| Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      | PSIO    | 201         |              |       |       |       |       |      |
|      | PSIO    | 202         |              |       |       |       |       |      |

**Courses Available**

PSIO 201, PSIO 202

OR Option 5: Introductory Mechanics

(R1192/L40)

**Not Satisfied:** OR Complete one course from Physics 141, 161H.

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

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

**Courses Available**

PHYS 141, PHYS 161H

AND Option 5: Intro Thermodynamics & Optics or Electricity & Magnetism

(R1192/L50)

**Not Satisfied:** AND Complete 1 course from Physics 142, 241, 162H, 261H.

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

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

**Courses Available**

PHYS 142, PHYS 162H, PHYS 241, PHYS 261H

**Mathematics Application Courses**

(R1217)

**Not Satisfied:** Will appear fully satisfied when student has satisfied 6 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**

(R1217/L10)

**Not Satisfied:** Consult with the advisor to discuss approved courses.

· **Units:** 6.00 required, 0.00 completed, 6.00 needed

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

**Courses Available**

ABE 201, ABE 284, ABE 428, ABE 481A, ABE 481B, ASTR 250, ATMO 436A, ATMO 469A, ATMO 469B, BIOC 462A, BIOC 462B, BIOC 463A, BIOC 466, BME 481B, CE 214, CHEE 201, CHEE 201L, CHEE 202, CHEE 301A, CHEE 481A, CHEE 481B, CHEM 161, CHEM 162, CHEM 325, CHEM 326, CHEM 404A, CHEM 480A, CHEM 480B, CHEM 481, CSC 345, CSC 422, CSC 433, CSC 436, CSC 437, CSC 445, CSC 453, CSC 460, CSC 477, CSCV 345, ECE 201R, ECE 381A, ECE 404, ECE 429, ECOL 302, ECOL 496N, ECON 332, ECON 361, ENGR 211C, ENGR 211P, ENGR 265, ENVS 420, ENVS 470, GEOG 463, GEOS 322, GEOS 356, GEOS 419, GEOS 432, GEOS 434A, GEOS 440, GEOS 469, GEOS 479, HWRS 421, HWRS 431, HWRS 460A, ISTA 352, ISTA 421, MCB 303, MCB 315, MCB 480, MSE 345, MSE 404, MSE 415, OPTI 201R, OPTI 404, PHYS 140, PHYS 143, PHYS 240, PHYS 241, PHYS 261H, PSIO 303, PSIO 472, PTYS 407, SIE 250, SIE 265, WSM 460A, PHYS 142, PHYS 162H, PHYS 141, PHYS 161H

**Mathematics Supporting Computer Science**

(R15810)

**Satisfied:** Will appear fully satisfied when student satisfies Computer Science requirements.

**Computer Science**

(R15810/L10)

**Not Satisfied:** Complete 1 course. Consult your advisor for a list of alternative programming courses.

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

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

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

**Courses Available**

CSC 110, ISTA 130

**Math Major Core Requirements**

(R1173)

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

**Calculus I**

(R1173/L10)

**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 122B, MATH 125

Core Courses

(R1173/L50)

**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

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

(R17553)

**Overall Requirement 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 Requirements**

(R1180)

**Overall Requirement Not Satisfied:** Will appear fully satisfied when student satisfies the Applied required courses, one of the sequences listed below, and one advisor approved course.

Applied Required Courses

(R1180/L15)

**Not Satisfied:** Complete 2 courses. Students should plan to take MATH 485 in their final Spring semester; MATH 422 should be taken earlier, when possible.

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

| Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      | MATH    | 422         |              |       |       |       |       |      |
|      | MATH    | 485         |              |       |       |       |       |      |

**Courses Available**

MATH 422, MATH 485

Option 1: Differential Equations
*(R1180/L20)*
**Not Satisfied:** Complete Math 454 and 456

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

| Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      | MATH    | 454         |              |       |       |       |       |      |
|      | MATH    | 456         |              |       |       |       |       |      |

**Courses Available**

MATH 454, MATH 456

OR Option 2: Probability and Statistics
*(R1180/L30)*
**Not Satisfied:** OR Complete Math 464 and 466

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

| Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      | MATH    | 464         |              |       |       |       |       |      |
|      | MATH    | 466         |              |       |       |       |       |      |

**Courses Available**

MATH 464, MATH 466

OR Option 3: Numerical Analysis
*(R1180/L40)*
**Not Satisfied:** OR Complete Math 475A and 475B

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

| Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      | MATH    | 475A        |              |       |       |       |       |      |
|      | MATH    | 475B        |              |       |       |       |       |      |

**Courses Available**

MATH 475A, MATH 475B

Additional Course
*(R1180/L50)*
**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**

MATH 413, MATH 424, MATH 454, MATH 456, MATH 464, MATH 468, MATH 475A, MATH 488

Major 400-level Upper Division

(R1180/L60)

**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

(R1181)

**Overall Requirement 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

(R1181/L3)

**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

(R1181/L10)

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

· **GPA:** 2.000 required, 0.000 completed

Major Units

(R1181/L15)

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

· **Units:** 34.00 required, 0.00 completed, 34.00 needed

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

Major Residency

(R1181/L20)

**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

| Term | Subject | Catalog Nbr | Course Title | Grade | Units | RptCd | RqDes | Type |
|------|---------|-------------|--------------|-------|-------|-------|-------|------|
|      |         |             |              |       |       |       |       |      |
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Major Upper Division

(R1181/L30)

**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

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

(R16193)

**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.