Program Change Request

Date Submitted: 09/26/18 11:32 am

Viewing: **BS-CHEM-ECT : Chemistry - BS, Environmental Chemistry Track**

Last approved: 04/30/18 10:44 am
Last edit: 11/08/18 8:19 pm
Changes proposed by: hgaede

<table>
<thead>
<tr>
<th>Catalog Pages Using this Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry - BS, Environmental Chemistry Track</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td>Holly Gaede</td>
</tr>
</tbody>
</table>

Academic level: Undergraduate
Effective Term: 2019-2020
Department: Chemistry
College: Science
Program type: Degree w/Concentration
Degree designation: BS - Bachelor of Science
With a major in: Chemistry (CHEM)
Associated Program: Not Applicable
With a concentration in: Environmental Chem Track(BS) (ECT)
Catalog Program Title: Chemistry - BS, Environmental Chemistry Track
CIP and Fund code: 40050100

Rationale for Proposal
Changes reflect updated numbering for general chemistry and physics HCG 04.30.2018 - edits made to program to remove CHEM 103, 113, 104 and 114 which have been inactivated effective Fall 2018.

Program hours: 120
Is this program eligible for financial aid? No
Will program hours change (increase/decrease) due to the proposed curriculum changes?
Program delivery mode: On-campus

Catalog Program Requirements

<table>
<thead>
<tr>
<th>Approval Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 08/31/18 11:17 am Simon North (swnorth): Approved for CHEM Department Head</td>
</tr>
<tr>
<td>2. 09/04/18 7:53 am Angel Mario Carrizales (carri1214): Rollback to Initiator</td>
</tr>
<tr>
<td>3. 09/10/18 1:28 pm Simon North (swnorth): Approved for CHEM Department Head</td>
</tr>
<tr>
<td>4. 09/11/18 5:16 pm Angel Mario Carrizales (carri1214): Rollback to Initiator</td>
</tr>
<tr>
<td>5. 09/26/18 2:10 pm Simon North (swnorth): Approved for CHEM Department Head</td>
</tr>
<tr>
<td>6. 10/03/18 5:30 pm Angel Mario Carrizales (carri1214): Approved for Curricular Services Review</td>
</tr>
<tr>
<td>7. 10/05/18 2:23 pm Sara Thigpin (sarathigpin): Approved for SC Committee Preparer UG</td>
</tr>
<tr>
<td>8. 10/05/18 2:32 pm Lucas Macri (lmacri): Approved for SC Committee Chair UG</td>
</tr>
<tr>
<td>9. 10/05/18 2:33 pm Lucas Macri (lmacri): Approved for SC College Dean UG</td>
</tr>
<tr>
<td>10. 10/08/18 1:53 pm Sandra Williams</td>
</tr>
</tbody>
</table>
### Plan of Study Grid

**First Year**

**Fall**
- **CHEM 100**: Horizons in Chemistry
- **CHEM 101**: Course CHEM 101 Not Found
- **CHEM 119**: Fundamentals of Chemistry I 1
- **ENGL 104**: Composition and Rhetoric
- **HIST 105**: History of the United States 2
- **MATH 151**: Engineering Mathematics I
  - or **MATH 171**: or Analytic Geometry and Calculus

**Semester Credit Hours**: 15

**Spring**
- **CHEM 102**: Course CHEM 102 Not Found
- **CHEM 120**: Fundamentals of Chemistry II 1
- **HIST 106**: History of the United States 2
- **MATH 152**: Engineering Mathematics II
  - or **MATH 172**: or Calculus
- **PHYS 218**: Mechanics
- **PHYS 206**: Newtonian Mechanics for Engineering and Science
- **PHYS 226**: Physics of Motion Laboratory for the Sciences

**Semester Credit Hours**: 15

**Second Year**

**Fall**
- **CHEM 227**: Organic Chemistry I 1
- **CHEM 231**: Techniques of Organic Chemistry
- **PHYS 207**: Electricity and Magnetism for Engineering and Science
- **PHYS 227**: Electricity and Magnetism Laboratory for the Sciences
  - Select one of the following:
    - **MATH 221**: Several Variable Calculus
    - **MATH 251**: Engineering Mathematics III
    - **MATH 253**: Engineering Mathematics III
    - **PHYS 208**: Electricity and Optics

**Semester Credit Hours**: 13

**Spring**
- **CHEM 228**: Organic Chemistry II 1
- **CHEM 234**: Organic Synthesis and Analysis 3
- **CHEM 362**: Descriptive Inorganic Chemistry
  - Select one of the following:
    - **MATH 304**: Linear Algebra
    - **MATH 308**: Differential Equations
    - **STAT 211**: Principles of Statistics I

**Semester Credit Hours**: 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMO 363</td>
<td>Introduction to Atmospheric Chemistry and Air Pollution</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 111</td>
<td>Introductory Biology I</td>
<td></td>
</tr>
<tr>
<td>BIOL 112</td>
<td>Introductory Biology II</td>
<td></td>
</tr>
<tr>
<td>GEOL 104</td>
<td>Physical Geology</td>
<td></td>
</tr>
<tr>
<td>OCNG 410</td>
<td>Physical Oceanography</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total Semester Credit Hours</strong></td>
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</table>

### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CHEM 315</td>
<td>Fundamentals of Quantitative Analysis</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 318</td>
<td>Quantitative Analysis Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 327</td>
<td>Physical Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 433</td>
<td>Advanced Inorganic Chemistry Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>POLS 206</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Environmental Chemistry Track Elective</strong></td>
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</tr>
<tr>
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<td><strong>Total Semester Credit Hours</strong></td>
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### Spring

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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<tbody>
<tr>
<td>CHEM 325</td>
<td>Physical Chemistry Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 328</td>
<td>Physical Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>POLS 207</td>
<td>State and Local Government</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Environmental Chemistry Track Elective</strong></td>
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</tr>
<tr>
<td></td>
<td><strong>Total Semester Credit Hours</strong></td>
<td><strong>15</strong></td>
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</tbody>
</table>

### Select two of the following:

- ATMO 363
- BIOL 111
- BIOL 112
- GEOL 104
- OCNG 410

### Cultural discourse
- Communication
- Language, philosophy and culture
- Creative arts
- Social and behavioral sciences
- International and cultural diversity

### Fourth Year

#### Fall

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CHEM 326</td>
<td>Physical Chemistry Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 415</td>
<td>Analytical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 491</td>
<td>Research</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Semester Credit Hours</strong></td>
<td><strong>9</strong></td>
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</tbody>
</table>

### Select one of the following: 6

- CHEM 446
- CHEM 456
- CHEM 462
- CHEM 464
- CHEM 466
- CHEM 468
- CHEM 470
- CHEM 483
- CHEM 489
- BICH 410
- BICH 411
- BICH 440
- BICH 441
- PHYS 309

### Select two of the following: 4

- Communication
- Language, philosophy and culture
- Creative arts
- Social and behavioral sciences
- International and cultural diversity

### Semester Credit Hours
- **16**
Language, philosophy and culture
Creative arts
Social and behavioral sciences
International and cultural diversity

Cultural discourse
Semester Credit Hours 16

Spring
CHEM 434 Analytical Instrumentation Laboratory 2
CHEM 481 Seminar 3 2
CHEM 491 Research 5 3
Select one of the following: 6 3
CHEM 446 Organic Chemistry III
CHEM 456 Chemical Biology
CHEM 462 Inorganic Chemistry
CHEM 464 Nuclear Chemistry
CHEM 466 Polymer Chemistry
CHEM 468 Materials Chemistry of Inorganic Materials
CHEM 470 Industrial Chemistry
CHEM 483 Green Chemistry
CHEM 489 Special Topics in...
BICH 410 Comprehensive Biochemistry I
BICH 411 Comprehensive Biochemistry II
BICH 440 Biochemistry I
BICH 441 Biochemistry II
PHYS 309 Modern Physics

Select two of the following: 4 5
Communication
Language, philosophy and culture
Creative arts
Social and behavioral sciences
International and cultural diversity

Cultural discourse
Semester Credit Hours 15
Total Semester Credit Hours 120

1 Select a section designated for chemistry majors.
2 Students may substitute any 6 hours of American history courses approved by the University Core Curriculum to fulfill this requirement, but no more than 3 hours may be in Texas history. Students seeking teacher certification must take HIST 105 and HIST 106.
3 This is a designated C- or W-course.
4 These electives must include 12 hours of courses which meet the language, philosophy and culture (3 hours), creative arts (3 hours), social and behavioral science (3 hours) and communication (3 hours) requirements of the University Core Curriculum. In addition, 3 hours of courses must be in the area of International and Cultural Diversity and 3 hours must be in the area of Cultural Discourse. These may be in addition to the previous 12 hours of University Core Curriculum courses, or if a course in this category satisfies an area of the Core, it can be used to meet both requirements. Electives should be chosen in consultation with the chemistry advisor. Electives should be chosen in consultation with the chemistry advisor and should be selected to meet the residency requirement (36 hours at 300-400 level must be taken at TAMU). Electives recommended in the various track programs should be strongly considered.
5 The total hours of CHEM 485 and CHEM 491 taken by BS chemistry majors on a graded (A–F) basis may not exceed 15. Additional hours of these courses may be taken on a satisfactory/unsatisfactory basis.
6 Students wishing to complete an American Chemical Society certified degree program must take at least one semester of biochemistry (i.e., BICH 410 or BICH 440).

Additional information
Changes reflect updated numbering for general chemistry and physics HCG 04.30.2018—edits made to program to remove CHEM 103, 113, 104 and 114 which have been inactivated effective Fall 2018—sw

Required Proposal Forms
BS CHEM ECT 2019.pdf

Reviewer Comments
Angel Mario Carrizales (carri1214) (09/04/18 7:53 am): Rollback: Per the initiator’s request.
Angel Mario Carrizales (carri1214) (09/11/18 5:16 pm): Rollback: Please address the following, 1) The Plan of study and the footnote tables list the International and Cultural Diversity requirement (ICD) but does not include the new Cultural Discourse (CD) graduation requirement. 2) Attach an edited certificate evaluation from Howdy that matches the proposed catalog edits.
Angel Mario Carrizales (carri1214) (10/03/18 5:28 pm): Edits made to the plan of study grid to conform to catalog style guidelines. To be consistent with this program’s formatting Cultural Discourse text has been added to all “Select” statements that have footnote 4.
Angel Mario Carrizales (carri1214) (10/03/18 5:30 pm): Initial concerns addressed.
Sandra Williams (sandra-williams) (11/05/18 3:07 pm): UCC approved November 2018.
Detail Requirements

BSCHEMECT 2019

Information for Degree Evaluation

This is NOT an official evaluation.

Print Instructions

Program Evaluation

Limitation: Correspondence: No more than 12 hours of correspondence earned through an accredited institution may be used for an undergraduate degree.

Limitation: Combination: Maximum combination of 18 hours of 481, 482, 485 and/or 491 courses may be used for an undergraduate degree.

Limitation: No more than 50% of courses required for the degree plan can be taken as Distance Education Courses for non-distance degree programs.

Limitation: Maximum of 4 hours of CHEM 101, 103, 107, 111, 113 may be used in this degree program.

Limitation: Maximum of 4 hours of CHEM 102, 104, 111, 114 may be used in this degree program.

Limitation: Maximum of 15 hours of CHEM 489, 491 may be used in this degree program.

Limitation: Only one of the following will satisfy the requirements for a degree: GENE 301, GENE 302, GENE 315, and GENE 320.

Limitation: Only one of the following will satisfy the requirements for a degree: MATH 131, MATH 142, MATH 147, MATH 151, and MATH 171.

Limitation: Only one of the following will satisfy the requirements for a degree: MATH 140, MATH 141, and MATH 166.

Limitation: Only one of the following will satisfy the requirements for a degree: MATH 148, MATH 152, and MATH 172.

Limitation: Only one of the following will satisfy the requirements for a degree: MATH 221, MATH 251, and MATH 253.

Limitation: Only one of the following will satisfy the requirements for a degree: MATH 304, MATH 309, MATH 311, and MATH 323.

Limitation: Only one of the following will satisfy the requirements for a degree: STAT 301, STAT 302, and STAT 303.

Program: BS CHEM-Environmental Chem
Catalog Term: Fall 2018 - College Station
Evaluation Term: Fall 2018 - College Station
Expected Graduation Date:
Request Number:
Minors:
Concentrations:

<table>
<thead>
<tr>
<th>Met</th>
<th>Credits</th>
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<table>
<thead>
<tr>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>Required</td>
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<tr>
<td>------------</td>
</tr>
<tr>
<td>Total Required:</td>
</tr>
<tr>
<td>Program GPA:</td>
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<tr>
<td>Overall GPA:</td>
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</table>

Other Course Information

Transfer: 0.000 0

This is NOT an official evaluation.

Area Major Coursework (55.000 credits) - Not Met:

No Area

A. Chemistry I 40pt 3hrs
   Complete 4 of the Following:
   a. 3hrs. Take CHEM 101.
   b. 3hrs.
   c. 3hrs. Take CHEM 107.
   d. 3hrs.

No AND B. Chemistry II 40pt 4hrs
Complete 1 of the following:
4 hrs. Take CHEM 102.

- AND
  - CHEM 100
  - CHEM 227
  - CHEM 228
  - CHEM 231
  - CHEM 234
  - CHEM 315 and 316
  - CHEM 325
  - CHEM 326
  - CHEM 362
  - CHEM 415
  - CHEM 433
  - CHEM 434
  - Physical Chemistry I 3hrs
    Select from CHEM 328.
  - Physical Chemistry II 3hrs
    Select from CHEM 327.
  - CHEM 481
  - CHEM 491 6hrs
    Select from CHEM 446, 456, 462, 464, 466, 468, 470, 483, 489;
    BICH 410, 411, 440, 441; PHYS 309. (Note: 3 hours of BICH is
    required for ACS certification.)

Total Credits and GPA 0.000 0.00

unofficial evaluation

Area Environmental Chemistry Track (12.000 credits) - Not Met

- Met Condition Rule Subject Attribute Low High Required Credits Required Courses Term Subject Course Title Attribute Credits Grade Source
  - AND
    - A. Science Rqrt I 6hrs
      Select from ATMO 363; BIOL 111, 112; GEOL 104; OCNG 410.
    - B. Science Rqrt II 6hrs
      Select from BESC 403; BIOL 214; GEOG 324, 330, 370; GEOL 420, 451; OCNG 420.

Total Credits and GPA 0.000 0.00

unofficial evaluation

Area Communication (6.000 credits) - Not Met

- Met Condition Rule Subject Attribute Low High Required Credits Required Courses Term Subject Course Title Attribute Credits Grade Source
  - AND
    - A. ENGL 104
    - B. Communication Rqrt 3hrs
      Select from any course with the [NCOM] attribute.

Total Credits and GPA 0.000 0.00

unofficial evaluation

Area Mathematics (14.000 credits) - Not Met

- Met Condition Rule Subject Attribute Low High Required Credits Required Courses Term Subject Course Title Attribute Credits Grade Source
  - AND
    - A. Mathematics Rqrt I 4hrs
<table>
<thead>
<tr>
<th>Area</th>
<th>Requirement Details</th>
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<tbody>
<tr>
<td>Life and Physical Sciences</td>
<td>9.000 credits</td>
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<tr>
<td><strong>Condition</strong></td>
<td><strong>Rule</strong></td>
</tr>
<tr>
<td>No</td>
<td>A.</td>
</tr>
<tr>
<td>No AND</td>
<td>B.</td>
</tr>
<tr>
<td>No AND</td>
<td>C.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Language, Philosophy & Culture | 3.000 credits | Not Met |
| **Condition** | **Rule** | **Subject** | **Attribute** | **Low High Required Credits** | **Required Courses** | **Term Subject Course** | **Title** | **Attribute** | **Credits** | **Grade** | **Source** |
| No | A. | Lang, Phil, Culture Rqmt 3hrs | | | | | |

| Creative Arts | 3.000 credits | Not Met |
| **Condition** | **Rule** | **Subject** | **Attribute** | **Low High Required Credits** | **Required Courses** | **Term Subject Course** | **Title** | **Attribute** | **Credits** | **Grade** | **Source** |
| No | A. | Creative Arts Requirement 3hrs | | | | |

| Social and Behavioral Sciences | 3.000 credits | Not Met |
| **Condition** | **Rule** | **Subject** | **Attribute** | **Low High Required Credits** | **Required Courses** | **Term Subject Course** | **Title** | **Attribute** | **Credits** | **Grade** | **Source** |
| No | A. | Social Science Rqmt 3hrs | | | | |

Total Credits and GPA: 0.000 .00
unofficial evaluation

Area: Citizenship (12.000 credits) - Not Met
Description: Completion of 4 semesters of Upper-Level ROTC may be substituted for 3 hours of American History and 3 hours of Political Science.

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits Grade Source Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>A. American History Rqmt 6hrs</td>
</tr>
<tr>
<td></td>
<td>Select from any course with the [KHIS] attribute.</td>
</tr>
<tr>
<td>No</td>
<td>AND B. Political Science Rqmt 6hrs</td>
</tr>
<tr>
<td></td>
<td>Take POLS 206 and POLS 207.</td>
</tr>
</tbody>
</table>

Total Credits and GPA 0.000 .00

unofficial evaluation

Area: General Electives (3.000 credits) - Not Met

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits Grade Source Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>A. General Electives 3hrs</td>
</tr>
<tr>
<td></td>
<td>Select any 100-499 course not used elsewhere, (except BIOL 101-110; CHEM 101-102; 111-112, 222, 242; ENGL 100-102; ENGR 101-102; KOME 100-119, 121-152; MATH 100-120, 120-131, 141-142, 155-166, PHYS 101-216.)</td>
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</tbody>
</table>

Total Credits and GPA 0.000 .00

unofficial evaluation

Area: Work Not Applied - Met
Description: See advisor for acceptable substitutions.

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits Grade Source Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>A. Courses not applied</td>
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Total Credits and GPA 0.000 .00

unofficial evaluation

Area: University Writing Requirement - Not Met

<table>
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<tr>
<th>Met</th>
<th>Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits Grade Source Courses</th>
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<tbody>
<tr>
<td>No</td>
<td>A. Writing Requirement</td>
</tr>
<tr>
<td></td>
<td>Two courses required. Only sections of CHEM 100-499 with the Writing attribute [UNWT] or the Oral Communication attribute [UCRT] may be used to satisfy this requirement.</td>
</tr>
</tbody>
</table>

Total Credits and GPA 0.000 .00

unofficial evaluation

Area: Int'l & Cult Diversity - Not Met

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition Rule Subject Attribute Low High Required Required Term Subject Course Title Attribute Credits Grade Source Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>A. Int'l &amp; Cultural Diversity</td>
</tr>
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unofficial evaluation
### Area - Foreign Language - Not Met

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition</th>
<th>Subject</th>
<th>Attribute</th>
<th>Low</th>
<th>High</th>
<th>Required Credits</th>
<th>Required Courses</th>
<th>Term Subject</th>
<th>Course Title</th>
<th>Attribute</th>
<th>Credits</th>
<th>Grade Source</th>
</tr>
</thead>
</table>
| No  | A.        | Foreign Language Rqnt | Complete one of the following:  
1. Two years of the same foreign language in High School.  
2. A two semester sequence of the same foreign language for University credit. | | | | | | | | | | |

Total Credits and GPA: 0.000, 0.00

### Area - Residence Requirement - Not Met

**Description**: A minimum of 36 hours of 300-400 level coursework must be completed at Texas A&M University. 12 hours must be in the major field.

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition</th>
<th>Subject</th>
<th>Attribute</th>
<th>Low</th>
<th>High</th>
<th>Required Credits</th>
<th>Required Courses</th>
<th>Term Subject</th>
<th>Course Title</th>
<th>Attribute</th>
<th>Credits</th>
<th>Grade Source</th>
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</thead>
<tbody>
<tr>
<td>No</td>
<td>A.</td>
<td>Residence - Major 12hrs</td>
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<tr>
<td>No</td>
<td>AND</td>
<td>Residence 300-499 24hrs</td>
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</table>

Total Credits and GPA: 0.000, 0.00

### Area - GPR-Major - Not Met

**Description**: A GPR of 2.00 must be maintained in all major field courses.

<table>
<thead>
<tr>
<th>Met</th>
<th>Condition</th>
<th>Subject</th>
<th>Attribute</th>
<th>Low</th>
<th>High</th>
<th>Required Credits</th>
<th>Required Courses</th>
<th>Term Subject</th>
<th>Course Title</th>
<th>Attribute</th>
<th>Credits</th>
<th>Grade Source</th>
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</thead>
</table>
| No  | A.        | Major GPR 54-hrs | Includes ATMO 363; EESC 403; BSCI 410-411, 440-441; 
BiOL 113-112, 214, 360; CHEM 100-499; GEOL 324, 330, 370; GEOL 104, 420, 451; OCNG 410, 420; PHYS 309. | | | | | | | | | | |

Total Credits and GPA: 0.000, 0.00

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