

REAL Curriculum Program Alignment Proposal

Department or School: ACSAT Enter dept/school name: Chemistry Date: 03/14/2020

Degree type: BS BA BBA BSN BM BFA BSW Minor Certificate

Program: Chemistry

REAL Area Program Designation Sought (check all that apply): R E A L

Dept/School Contact: Dr. Chris Hermann, chermann@radford.edu

BS/BA Requirements: CHEM 111, CHEM 112, CHEM 301, CHEM 302, CHEM (4 hrs of 300/400 level)

- Any degree program that fulfills a REAL area must include at least 9 unique credit hours for each area covered. At least 3 of these 9 credit hours must be at the 300 level or above
- A single major degree program may fulfill no more than three REAL areas for any one student, unless all four REAL areas are fulfilled by accreditation or licensure requirements.
- A single minor or certificate degree program may fulfill no more than two REAL areas.
- Degree program may cover up to two REAL areas using a single prefix.
- All courses documenting the coverage of a REAL area must fulfill all learning outcomes and be designated in that area.
- All courses that document fulfillment of a REAL area within a degree program of study are NOT required to be taught by the department/school. However, departments/schools are expected to formally communicate with other departments about reliance on and inclusion of courses in their degree program plans of study. Indicate this through signature of chair or director of the partnering department or school in the areas below.
- Departments or schools that seek to fulfill REAL areas must acknowledge assessment requirements for those areas. Assessment of degree seeking students is required to be conducted yearly by the department or school offering the degree program.
- If departments or schools want to use a menu of courses to fulfill a particular area, please duplicate the sections below for each REAL area and include information for each course included in the menu of options.
- Please save this file for submission as PROGRAM NAME_ProgramType.docx (Example: Criminal Justice_BS.docx)

By signing, the department/school acknowledges the above conditions and considerations:

Dept/School Signature <i>Christine K. Hermann</i>	Date: 4/16/20
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Official Program Description:

Please paste the entire official program description from the Radford University catalog in the space within this box. Find those here: <https://catalog.radford.edu/>

Please note that every department/school will have to submit a catalog change proposal for program that asks the Registrar's Office to insert language about the program coverage of the REAL areas into the official Radford University catalog upon approval.

Chemistry Minor

(20 semester hours)

A chemistry minor requires 20 hours of chemistry, which must include the following: CHEM 111, CHEM 112, CHEM 301, and 8 hours from chemistry courses numbered 200 or higher. CHEM 350 and CHEM 450 do not count towards the 20 hours of chemistry courses needed for the chemistry minor.

SCIENTIFIC AND QUANTITATIVE REASONING

<p>R Area: Course Prefix: CHEM Course Number: 111 Course Title: General Chemistry I Credit Hours: 4 New course: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Revised course: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Projected student enrollment per academic year: 432</p>	<p>Is this course required or an elective for your degree program? <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective Is this course offered within your dept/school? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, collaborating dept/school must also complete the remaining elements, and must sign below.</p> <p>Course Rotation: <input checked="" type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring <input checked="" type="checkbox"/> Intersession <input type="checkbox"/> Other (Explain below)</p> <p>Intended Frequency: <input type="checkbox"/> Every academic year <input checked="" type="checkbox"/> Every semester <input type="checkbox"/> Every other year <input type="checkbox"/> At least once every three years <input type="checkbox"/> Other</p> <p>Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:</p>
<p>R Area: Course Prefix: CHEM Course Number: 112 Course Title: General Chemistry II Credit Hours: 4 New course: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Revised course: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Projected student enrollment per academic year: 240</p>	<p>Is this course required or an elective for your degree program? <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective Is this course offered within your dept/school? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, collaborating dept/school must also complete the remaining elements, and must sign below.</p> <p>Course Rotation: <input type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring <input checked="" type="checkbox"/> Intersession <input type="checkbox"/> Other (Explain below)</p> <p>Intended Frequency: <input checked="" type="checkbox"/> Every academic year <input type="checkbox"/> Every semester <input type="checkbox"/> Every other year <input type="checkbox"/> At least once every three years <input type="checkbox"/> Other</p> <p>Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:</p>
<p>R Area: Course Prefix: CHEM Course Number: 301 Course Title: Organic Chemistry I Credit Hours: 4 New course: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Revised course: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Projected student enrollment per academic year: 140</p>	<p>Is this course required or an elective for your degree program? <input checked="" type="checkbox"/> Required <input type="checkbox"/> Elective Is this course offered within your dept/school? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, collaborating dept/school must also complete the remaining elements, and must sign below.</p> <p>Course Rotation: <input checked="" type="checkbox"/> Fall <input type="checkbox"/> Spring <input checked="" type="checkbox"/> Intersession <input type="checkbox"/> Other (Explain below)</p> <p>Intended Frequency: <input checked="" type="checkbox"/> Every academic year <input type="checkbox"/> Every semester <input type="checkbox"/> Every other year <input type="checkbox"/> At least once every three years <input type="checkbox"/> Other</p> <p>Signature of collaborating chair/director indicating acknowledgement for inclusion and designation if not offered in dept/school:</p>
<p>R Designated Course Required within the Program of Study Approved for Inclusion in the General Education Coursework: CHEM 111, CHEM 112, CHEM 120, CHEM 122, MATH 171, MATH 172, PHYS 111, PHYS 112, BIO 132</p>	

<p>R Area: Learning Goal: To apply scientific and quantitative reasoning to questions about the natural world, mathematics, or related areas.</p>	
<p>Learning Outcome 1: Students apply scientific and quantitative information to test problems and draw conclusions.</p>	<p>Description of learning outcome assessment plan:</p> <p>Data will be collected from the REAL General Studies Minor assessments conducted by the university in the student's senior year. Once the data is received in the department the department's assessment committee will review the data to determine if corrective action is necessary. If needed the assessment committee will develop an improvement plan in combination with faculty teaching classes in this area and the department's curriculum committee. The agreed upon changes will be incorporated into the classes. The department's assessment committee will then continue monitoring</p>

	the collected assessment data to determine the effectiveness of the corrective action and determine further actions if necessary.
<p>Learning Outcome 2: Students evaluate the quality of data, methods, or inferences used to generate scientific and quantitative knowledge.</p>	<p>Description of learning outcome assessment plan:</p> <p>Data will be collected from the REAL General Studies Minor assessments conducted by the university in the student's senior year. Once the data is received in the department the department's assessment committee will review the data to determine if corrective action is necessary. If needed the assessment committee will develop an improvement plan in combination with faculty teaching classes in this area and the department's curriculum committee. The agreed upon changes will be incorporated into the classes. The department's assessment committee will then continue monitoring the collected assessment data to determine the effectiveness of the corrective action and determine further actions if necessary.</p>
<p>Additional information for REAL Council consideration:</p>	

Are existing material resources adequate to support this program alignment proposal?

Yes No If not, what additional material resources would be needed?

Are existing space resources adequate to support this program alignment proposal?

Yes No If not, what additional space resources would be needed?

Are existing human resources adequate to support this program alignment proposal?

Yes No If not, what additional human resources would be needed?

Department Curriculum Committee Recommendation:	Signature: <i>Christopher J. Monrean</i>	Date: 4/16/20
Chair/Dean on Behalf of Dept/School:	Signature: <i>Christine K. Hermann</i>	Date: 4/16/20
College Curriculum Committee Approval:	Signature:	Date:
Dean/AVP Approval:	Signature:	Date:
REAL Council Recommendation:	Signature:	Date:
Faculty Senate Curriculum Committee Recommendation:	Signature:	Date:
Faculty Senate Approval:	Signature:	Date:
Provost Approval:	Signature:	Date: