

**BEACON PROGRAM CHECKLIST  
SECONDARY  
CHEMISTRY CERTIFICATION (Grades 9-12)**



**Education department**

**GENERAL EDUCATION**

**38 – 47 hrs**

The general education component is to be completed according to Columbia College degree requirements. (Please refer to your entrance year catalog for specific degree requirements.)

**LIBERAL ARTS AND SCIENCE DEGREE**

**40 – 63 hrs**

It is recommended that students seeking this certification choose a major that has similar course requirements in the degree. Your academic advisor can help you with your choice of major.

Students must complete the degree requirements as set forth by Columbia College. Hours required for completion will vary depending on area chosen. (Please refer to your entrance year catalog for specific degree requirements.)

**CONTENT AREA COURSEWORK FOR CHEMISTRY**

**35 hrs minimum**

| Grade | Course # | Course Title | Cr Hrs |
|-------|----------|--------------|--------|
|-------|----------|--------------|--------|

**History/Philosophy of Science and Technology (3 hrs min)**

|  |             |  |   |
|--|-------------|--|---|
|  | Choose one: | HIST 303 – Science, Technology, and Humanity: A History or<br>BIOL/CHEM/ENVS 105 – Essentials of Science | 3 |
|--|-------------|--|---|

**Twenty (20) hours in Chemistry coursework which must include:**

|  |            |  |   |
|--|------------|--|---|
|  | CHEM 322   | Inorganic Chemistry ( <i>Inorganic Chemistry</i> )   | 3 |
|  | CHEM 335   | Quantitative Analysis ( <i>Analytical Chemistry</i> )  | 3 |
|  | CHEM 310   | Organic Chemistry I ( <i>Organic Chemistry</i> )   | 3 |
|  | CHEM 401   | Introduction to Physical Chemistry/Chemical Physics<br>( <i>Physical Chemistry</i> )             | 3 |
|  | CHEM 420   | Biochemistry ( <i>Biochemistry</i> )   | 3 |
|  | Electives: | Chemistry Electives to complete the 20-hr minimum (Contact the Education Department for options) | 5 |

**Twelve (12) hours of additional Science coursework which must include:**

|  |          |  |   |
|--|----------|--|---|
|  | BIOL 110 | Principles of Biology I ( <i>Biology</i> )                             | 3 |
|  | PHYS 111 | College Physics ( <i>Physics</i> )                                     | 3 |
|  | GEOL 110 | Introduction to Physical Geology ( <i>Earth Science</i> )              | 3 |
|  | ENVS 115 | Introduction to Environmental Science ( <i>Environmental Science</i> ) | 3 |

**PROFESSIONAL EDUCATION COURSEWORK**

**57 hrs**

| Grade | Course # | Course Title              | Cr Hrs | Field Experience (observation hrs) included |
|-------|----------|---------------------------|--------|---|
|       | SOCI 270 | Diversity and Society     | 3      | none  |
|       | EDUC 100 | Introduction to Education | 3      | 15 hrs                                      |

[The College reserves the right to alter at any time requirements to meet state certification regulations.]

|   |               |  |    |          |
|---|---------------|--|----|----------|
|   | EDUC 200      | Law, Ethics, and Education   | 3  | none     |
|   | EDUC 220      | Methods of Teaching English Learners   | 3  | none     |
|   | EDUC 230      | Educational Psychology   | 3  | none     |
|   | EDUC 300      | Techniques of Teaching   | 3  | 15 hrs   |
|   | EDUC 390      | Education & Psychology of the Exceptional Child  | 3  | none     |
|   | Choose option | EDUC 396 – Child and Adolescent Development; <b>or</b> EDUC 391 – Child Psychology <b>and</b> EDUC 392 – Adolescent Psychology | 3  | none     |
| <b>Admission to the Teacher Certification Program (See Teacher Certification Program Checklist)</b> |               |  |    |          |
|   | EDUC 311      | Classroom Management Techniques  | 3  | 15 hrs   |
|   | EDUC 322      | Educational Measurement and Assessment   | 3  | none     |
|   | EDUC 338      | Content Reading and Writing  | 3  | 15 hrs   |
|   | EDUC 365      | Teaching Middle School and Secondary Science   | 3  | 15 hrs   |
|   | EDUC 375      | Advanced Content Methods   | 3  | 15 hrs   |
|   | EDUC 376      | Adolescent Literacy  | 3  |          |
|   | EDUC 400      | Senior Seminar   | 3  | none     |
| <b>Approval for Student Teaching (See Student Teaching checklist)</b>                               |               |  |    |          |
|   | EDUC 425      | Undergraduate Student Teaching   | 12 | 16 weeks |
|   |               | Total Credit Hours   | 57 |          |
| <b>Approval for DESE Certification recommendation (See DESE Certification checklist)</b>            |               |  |    |          |

**Retention Criteria:**

- Complete at least 6 hours of professional education each year
- Complete Field Experiences and receive favorable evaluations from cooperating teachers and college supervisors
- Maintain a cumulative GPA of 3.0 or above in professional education courses and content area courses

**Other requirements for certification that must be completed prior to graduation:**

- Successful completion/passing of appropriate Missouri Content Assessment (MoCA) (must be passed prior to student teaching)
- Successful completion of program certification performance assessment - MEES

\*This is not a degree checklist  
Rev. 8/2022

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