

**COMBINED ADVANCED  
DEGREE PATHWAY  
TO SECONDARY EDUCATION**

**PROGRAM GUIDE**

**FOR**

**BA/BS CHEMISTRY MAJORS  
& MA IN STEM EDUCATION**

**ELIGIBILITY FOR ADMISSION  
AND COMPLETION OF PROGRAM  
2018-2019**

## INTRODUCTION

**The purpose of this program guide** is to provide all native and transfer, students interested in pursuing K- 12 Chemistry certification in the Combined Advanced Degree Program (CADP) the requirements needed to accomplish a certification in the teaching of Chemistry. The following pages provide the candidate with benchmarks for program entry and completion along with general College of Education policies regarding this program, student responsibilities and general advisement information.

Candidates are also provided with a sample Table (Table 1) that demonstrates possible program course sequence that can be targeted to help develop their content background for teaching middle and/ or high school Chemistry. Please note that Table 1 is merely a sample for demonstrative purposes. Choice and sequence of Chemistry courses and general education courses need to be confirmed with the undergraduate science advisor. Candidates can choose to target any **science** content core courses throughout their Chemistry program only with the consent and approval of their science education advisor.

Education based courses in particular must be covered prior to taking any graduate level course belonging to the MA STEM sequence. These too must be approved through the undergraduate science education advisor.

Finally, a student agreement presented at end of this document, pertaining to matriculation into the MA STEM program and acknowledgement of program requirements should be signed by candidate. No signature provided will indicate “no entry” into the program

**NOTE: Please be aware that any disciplinary or academic sanctions will/may result in extended time for program completion and will prolong graduation.**

### **Benchmark Exemptions:**

On June 4, 2014, the State Board of Education adopted new regulations for teacher preparation program entry and teacher certification. These rules include a new basic skills requirement:

- Candidates starting a traditional teacher preparation program in or after the 2015-16 academic year must pass a basic skills assessment prior to starting coursework in a program
- Alternate route candidates seeking a Certificate of Eligibility (CE) must pass a basic skills assessment to obtain the CE as of September 1, 2015.

Candidates are exempt from the basic skills requirement (Praxis Core) if they can demonstrate a score on the SAT, ACT, or GRE at or above the cut score for the year in which they took the exam. To see if you are exempt please check:

<http://www.state.nj.us/education/educators/rpr/preparation/BasicSkillsExemptionCutScores.pdf>

## PROGRAM BENCHMARKS AND REQUIREMENTS

### Entry requirements into BA/ BS Chemistry

- Meet entry requirements for the BA/BS in Chemistry Program please see:  
<https://academics.rowan.edu/csm/departments/chembio/acad/baChem.html> and  
<https://academics.rowan.edu/csm/departments/chembio/acad/bschem.html>

### Benchmark 1: Entry Requirements for Education Coursework in Senior Year (Deadline: March 31 during Junior Year)

- \*Achieve and maintain Overall/ Cumulative GPA of 3.0 or above (*nonnegotiable / non appealable*)
- Grades C- or better in any education courses. Courses required for the MA in STEM Education may only be attempted twice.
- \*Passing score on Praxis Core Academic Skills for Educators:
  - Reading Test (Test Code 5712) : Score of at least 156
  - Writing Test (Test Code 5722): Score of at least 162: and
  - Math Test (Test Code 5732): Score of at least 150
- Attend advising session with College of Education Advisor

### Benchmark 2: Entry Requirements for Matriculation into MA STEM (March 31 of Senior Year)

- \*Achieve and maintain Overall/ Cumulative GPA of 3.0 or above
- Grades C- or better in any education courses. Courses required for the MA in STEM Education may only be attempted twice.
- \*Praxis II in Chemistry: Content Knowledge; test code 5245 and General Science Knowledge (5435) (Required score: **152 for each**) <https://www.ets.org/praxis/nj/requirements>
- Completed Full-Year Residency application in the Tk20 system (**Between November 1- November 30 during senior year**)
  - *Note: Students will be placed in the 7 most southern NJ counties for their Clinical Practice Placement; Burlington, Camden, Gloucester, Atlantic, Cumberland, Salem and Cape May. No exceptions will be made.*
- Submission of NJDOE Criminal Background check **by December 1<sup>st</sup> of Senior year**.
- Submission of clear TB test **by December 1<sup>st</sup> of Senior year**. Mantoux (TB) Tests: School districts are now requiring current TB tests for all field placements. Please visit <http://www.rowan.edu/colleges/education/ofe/mantoux.html> for details.

### Benchmark 3: Checkpoint for completion of BA/BS and senior level education coursework (End of Spring semester senior year):

- Proof of completion of BA/BS requirements in Chemistry demonstrating a coherent sequence of at least 30 credit hours of content specialization courses; 12 of which are at the 300 level or higher.
- Complete successfully the following three required courses:
  - Educational Psychology or Characteristics of Knowledge Acquisition (or confirmed state equivalent)
  - Adolescent Psychology (or confirmed state equivalent)
  - Health & Wellness or Nutrition or Biology (human related preferable) .If not completed see graduate advisor regarding alternative.

### Benchmark 4: For successful program completion (At the end of the graduate year)

- Overall GPA of 3.0 or better (*nonnegotiable / non appealable*) at exit of the program with no course grade lower than C- and no *Incompletes*. Courses required for the MA in STEM Education may only be attempted twice.
- Meets minimum expectations on all signature assignments
- \*Successful submission and completion of NJDOE approved summative teacher performance project (edTPA). Cut

score / passing score as determined by state.

- Final residency evaluation demonstrates “Basic” or higher on all Danielson Framework indicators and “Meets Expectations” or higher on all SPA addendum indicators as evidenced by successful completion of STEM 60512 AND 60513
- Successful completion and recommendation for certification from, Rowan University Residency supervisor and Program, Coordinator.

**Graduation and Certification:** Please note the completion and submission of both graduation and teaching certification applications. See dates listed on the Registrar’s webpage at [www.rowan.edu/Registrar](http://www.rowan.edu/Registrar). Students apply for graduation electronically through banner self-service and apply for certification through the College of Education Advising Center (CEAC). A student can obtain a cert application through the College of Education Advising Center or online on the College of Education webpage. **It is important that these forms be submitted to the appropriate office by the printed deadline dates.** “Walking” papers are not a means to graduate. It is only a means to participate in the commencement ceremony. Go to [www.rowan.edu/registrar](http://www.rowan.edu/registrar) (under forms) for the Commencement Participation Form and deadline/details (signatures are needed). Completed certification application with OCE at College of Education. Deadline: **January 15th -March 31<sup>st</sup> of graduate year.**

**\*Essential Notes**

- Please note that required values and passing for GPA, all praxis exams and edTPA are non-negotiable and non-appealable
- *Incomplete or unscorable tasks on edTPA will/ may delay graduation and certification*
- For all students, all of the **required courses and any eligible electives (*this means all allied science and math classes pertinent to your Chemistry GPA*) must** be used in the calculation of the Chemistry GPA (i.e., none of these courses are to be excluded in GPA calculation).
- For transfer (and native students taking any of these courses at other institutions), the Chemistry GPA is to be calculated from transcripts and coursework at Rowan.

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**Table 1: Proposed Course Sequence with Benchmarks.** Table demonstrates a sample of course sequence throughout the CADP Chemistry and MA STEM program. Courses listed are examples of courses that can be taken in Chemistry but decision(s) pertaining to choice of designated science courses is reserved for the relevant science department. Deadline for meeting particular benchmark is designated

Year 1	Fall* (14 credits)	s.h.	Spring (15 credits)	s.h.
<b>Courses that should normally be taken in the freshman year</b>	COMP 01111: College Comp I	3	COMP 01112: College Comp II	3
	CHEM 06100: Chemistry I	4	CHEM 06101: Chemistry II	4
	MATH 01.130: Calculus I	4	MATH 01131: Calculus II	4
	FNDS 21230 Characteristics of Knowledge Acquisition	3	PHYS 00220: Intro to Mechanics	4
Year 2	Fall (17 credits)	s.h.	Spring (17 credits)	s.h.
<b>Courses that should normally be taken in the sophomore year</b>	CMS 04205: Public Speaking	3	CHEM 09250: Quantitative Analysis	4
	RE Elective ACE	3	Free Elective/NPC	3
	PHYS 00222: Intro to Electricity & Magnetism	4	PHIL 09369: Philosophy of Science-WI and M/G	3
	CHEM 07200: Organic Chemistry 1	4	CHEM 07201: Organic Chemistry 2	4
	GE/RE Elective (HHL/LIT)	3	GE/RE Elective (LIT)	3
Year 3	Fall (16-17 credits)	s.h.	Spring (14 credits)	s.h.
<b>Courses that should normally be taken in the junior year</b>	CHEM 08400: Physical Chemistry I	3	CHEM 05450: Seminar I	1
	CHEM 07348: Biochemistry	4	PSY 09210: Adolescent Development	3
	Health and Wellness (HLTH 00103) OR a Biology course	3-4	Restricted Elective	4
	General Ed/Free Elective	3	General Ed/Free Elective	3
	CHEM 05440 Research I	3	General Ed/Free Elective	3
<b>DUE: BENCHMARK 1</b>				
Year 4	Fall (12credits)	s.h.	Spring (15-16 credits)	s.h.
<b>Courses that should normally be taken in the senior year</b>	General Ed/Free Elective	3	STEM 60501: STEM Teaching & Research Methods: I	3
	General Ed/Free Elective	3	STEM 60510: Teaching STEM in Diverse Settings	3
	SMED 60550: Schools & Society	3	Restricted Elective	4
	READ 30520: Content Area Literacy	3	General Ed/Free Elective	3
			General Ed/Free Elective	2-3
<b>DUE: BENCHMARKS 2&amp;3</b>				

\* One of the courses taken freshman year must be a Rowan Seminar designated course.

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Year 5	Fall (9 credits)	s.h.	Spring (9 credits)	s.h.
<b>Courses that should normally be taken in Master's degree year</b>	STEM 60522: STEM Teaching & Research Methods: Science II	5	STEM 60523: STEM Teaching & Research Methods: Science III	6
	STEM 60512: STEM Education Residency I	1	STEM 60513: STEM Education Residency II	3
	SELN 60576: Inclusive Instruction in STEM Classrooms	3	<b>DUE: BENCHMARK 4</b>	

Year 5 (cont'd)	Summer (3 credits)	s.h.
<b>Courses that should normally be taken in Master's degree year</b>	STEM 60504: Professional Seminar for STEM Educators	3

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**For General Education requirements and credits please see: <https://academics.rowan.edu/csm/docs/chemadvising.pdf> under “Course Requirements for a Major in Chemistry (B.A/ B.S). However, please note that the courses required to earn initial NJ certification to teach in the public schools, but may not be required for BA/BS in Chemistry are. Adolescent Development (satisfies SBS); Characteristics of Knowledge Acquisition (satisfies SBS) OR Health and Wellness (HLTH 00103) OR a biology course. Prerequisites of Calculus I and Biology 2 are required**

**Table 2. Demonstrates sample breakdown of coursework**

**B.A. in Chemistry Course Work 35 Credit Hours**

<b>Chemistry Major Required Courses: 35 credits</b>	<b>Credits</b>	<b>✓</b>
Calculus II	4	
Chemistry I <i>or</i> Advanced Chemistry I****	4	
Chemistry II <i>or</i> Advanced Chemistry II****	4	
Organic Chemistry I****	4	
Organic Chemistry II****	4	
Quantitative Analysis	4	
Biochemistry	4	
Physical Chemistry I	3	
Seminar I	1	
Co-op <i>or</i> Research I	3	
<b>TOTAL CREDITS CHEMISTRY MAJOR COURSES</b>	<b>35</b>	

<b>Restricted/Directed Elective Courses: 39-40 credits</b> (Note: **12 credits are required courses for the M.A. STEM Education Program)	<b>Credits</b>	<b>✓</b>
Schools & Society: Foundations for Secondary Teaching**	3	
Teaching STEM in Diverse Settings**	3	
Content Area Literacy**	3	
STEM Teaching & Research Methods I**	3	
Inorganic Chemistry AND Advanced Inorganic Chemistry Laboratory	4-5	
Instrumental Methods		
+ADD 23 Additional Credits of free electives	23	
<b>TOTAL CREDITS ELECTIVES</b>	<b>39-40</b>	

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**M.A. STEM Education Coursework during the Residency Year: Credit Hours Total (21)**

Additional M.A. STEM Required Courses	s.h.	✓
Inclusive Instruction in STEM Classrooms	3	
Professional Seminar for STEM Educators	3	
STEM Education Residency I	1	
STEM Education Residency II	3	
STEM Teaching & Research Methods: Science II	5	
STEM Teaching & Research Methods: Science III	6	
<b>TOTAL MA STEM CREDITS DURING RESIDENCY YEAR</b>	<b>21</b>	
<b>TOTAL REQUIRED MA STEM CREDITS</b>	<b>33***</b>	

\*\*These courses will be double counted (accepted for both degrees). They fit in the BA as 6 s.h. restricted electives and 6 s.h. Free Electives.

\*\*\* 21 credits during Residency +12 taken during BA program

\*\*\*\* It can be suggested that, since the BA in Chemistry can offer Introductory Mechanics-RS and Introductory Electricity and Magnetism, students could accomplish this double certification with two less mathematically rigorous courses such as Introductory Thermodynamics, Fluids, Waves, & Optics and Physics of Everyday Life. In effect, students can be afforded that option.



## STUDENT RESPONSIBILITIES

See University Undergraduate Catalog ([www.rowan.edu/catalog](http://www.rowan.edu/catalog)):

“...It is the responsibility of the student to become knowledgeable of, and to observe, all University policies, regulations and procedures. The University is under no obligation to waive a requirement or grant an exception because a student pleads ignorance of a policy, regulation or requirement or because a student asserts that he/she has not been informed of such policy, regulation or requirement.

It is the student’s responsibility to become familiar with, and to remain informed about, all academic, administrative, financial or other policies, regulations or requirements concerning admission, registration, payment of tuition or fees, continued enrollment, grades and satisfactory program progress, graduation requirements or any other matter which affects the student. Students are especially expected to know the requirements of the program in which they are enrolled. While the faculty and staff (advisors) will endeavor to assist in every manner possible, students are responsible for becoming and remaining informed of current program and graduation requirements, their status in the program and their progress toward graduation.”

Please work closely with your education and subject matter area advisors to make sure that these requirements are satisfied. Your graduation and/or certification approval may be withheld if these requirements are not met.

## ADVISEMENT INFORMATION

Because the time period for registration is limited, you are encouraged to make an appointment for advisement.

Even if the individual courses are completed, the undergraduate and graduate degrees will not be awarded until all of the requirements for both programs also met/completed. Meeting on a regular basis with both advisors will avoid any graduation/certification problems.

Be reasonable in your demands on your advisors’ time and resources:

- (1) Make an appointment to see your advisor, do not just “show up” expecting your advisor to be available. See your advisor well ahead of deadlines [If you wait until the last minute you will not get the attention you are seeking.]**
- (2) Attend the College of Education Advising Center (CEAC) regular information sessions scheduled on the College of Education website.**
- (3) Be sure to ask for clarification on any and all issues [It is better to receive correct information than to accept rumors.]**
- (4) Check your Rowan University email account for vital emails from your advisor.**

Your undergraduate advisor is a 12 month employee. Please plan your advising appointments early and do not wait until the last minute to be seen.

For your questions regarding graduate work, please contact the MA STEM in Education program coordinator

## **STUDENT ACKNOWLEDGEMENT OF PROGRAM REQUIREMENTS**

- I have read and understand all the CADP program requirements and benchmarks for the CADP in Chemistry BA or BS/MA STEM Education program. I also understand from the above guidelines all the courses required to continue in and to complete the CADP in Chemistry BA or BS/MA STEM Education program.
- I understand that I can apply for graduation with a BA/BS Science and Math Majors and MA in STEM Education and certification after successfully completing all of the requirements needed for both the BA/BS Science and Math Majors and MA in STEM Education. I will apply to graduate and earn both degrees (Bachelor's and Master's) upon completion of all graduate coursework.
- I understand that even if the Residency Year is completed, the BA/BS Science and Math Majors will not be awarded until all the requirements for the MA in STEM Education are also met/completed..
- I understand that due to federal regulations, certain programs are not eligible for the Title IV financial aid. A list of eligible and ineligible programs is located at <https://rowanu.com/graduate/aid>.
- I acknowledge that I am responsible for making any registration changes (adds/drops/withdrawals) each term following the proper procedures and within the appropriate deadline according to the type of course in which I am enrolled, or I will be responsible for any charges and/or fees incurred.
- I understand that if I fail to comply with the statements above and do not meet any/all requirements within the specified timeframe, I may not be able to start and/or continue in my selected program..
- I understand that completion time will be impacted if I fail to meet with both advisors, meet application deadlines such as passing Praxis Core and II, meet GPA requirements, meet all general education courses or prerequisite requirements.
- I understand that any disciplinary or academic sanctions will / may result in an extended time for program completion and will prolong graduation.
- I understand that it is my responsibility to meet the University's deadline to apply for graduation. I further understand that failure to do so will result in my certification being delayed until the end of the semester in which I officially graduate even if I have completed all requirements
- **(Statement for freshmen and transfers who selected the program during university application process): I have read and acknowledged all the information in this program guide in my first meeting with the education advisor, and was informed I had an option to opt out of this program with the knowledge that if I do, the education advisor will request my major to be changed to the original subject matter program.**
- **Student initials (if opting out of the program):** \_\_\_\_\_
- Sign if you agree to all CADP program requirements and to staying in the program:

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**Print Full Name and Signature**

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**Date**