



Department of Chemistry
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December 9, 2021

To: Scott Furlong, Provost
Kristin Croyle, Dean of CLAS
Elizabeth Schmidt, Faculty Assembly Chair

From: Fehmi Damkaci, Chair of Department of Chemistry

Re: Program Revision request for Chemistry BA, Chemistry B.S. (Track 1 and Track 2), and Biochemistry B.S. Majors

We would like to make the following revision in our four majors which will increase the total credit requirement for one credit hour, as shown in the attached document.

The requested revision is adding a new course, CHE302, as a core requirement in all of majors.

CHE302, Career Skills for Chemists, course was recently developed and approved by UCC to teach soft career skills for juniors and seniors before they graduate from our programs. It will also serve as a seminar course for transfer students to introduce all faculty members. The course also includes DEI topics for chemists which will be part of the major assessment plan.

The course will be taught by all faculty, however one faculty, in alternating order, will be in charge of the course every year to manage the course on load (1 credit per year). Each faculty will teach one of the ten topics over a semester, which requires them to teach for one or two hours per year for the course.

Thank you for your consideration.

A handwritten signature in blue ink, appearing to read "fehmi damkaci".

Program Codes:

Chemistry BA - 055

Biochemistry BS-058

Chemistry BS - 060

Chemistry BS Environmental Track - 062

Current Program		Proposal	
<p>Chemistry Major-B.A. Degree</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry 4</p> <p>CHE 113 - Laboratory (for CHE 111) 0</p> <p>CHE 212 - General Chemistry II 4</p> <p>CHE 214 - General Chemistry II Lab 0</p> <p>CHE 322 - Analytical Chemistry 4</p> <p>CHE 323 - Analytical Chemistry Lab 0</p> <p>CHE 331 - Organic Chemistry 3</p> <p>CHE 333 - Organic Chemistry Lab 1</p> <p>CHE 332 - Organic Chemistry II 3</p> <p>CHE 334 - Organic Chemistry Lab II 1</p> <p>CHE 341 - Physical Chemistry 3</p> <p>CHE 342 - Physical Chemistry II 3</p> <p>CHE 343 - Comprehensive Physical Chemistry Lab 1</p> <p>Select one option from the following: 4</p> <p>Option 1.</p> <p>CHE 425 - Instrumental Analysis</p> <p>CHE 426 - Instrumental Analysis Lab</p> <p>Option 2.</p> <p>CHE 451 - Inorganic Chemistry</p> <p>CHE 453 - Inorganic Chemistry Lab</p> <p>Option 3.</p> <p>CHE 360 - Introductory Biochemistry</p> <p>CHE 363 - Introductory Biochemistry</p> <p>Select one course from the following: 2</p> <p>CHE 494 - Capstone Research</p> <p>CHE 498 - Internship</p> <p><u>B. Cognate Requirements</u></p> <p>MAT 210 - Calculus I 4</p> <p>MAT 220 - Calculus II 4</p> <p>MAT 318 - Statistics in the Sciences 3</p> <p>Select one sequence from the following: 8</p> <p>PHY 111/212 - College Physics I & II</p> <p>PHY 112/213 - General University Physics I & II</p>	<p>52 cr</p> <p>33 cr</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>4</p> <p>2</p> <p>19 cr</p> <p>4</p> <p>4</p> <p>3</p> <p>8</p>	<p>Chemistry Major-B.A. Degree</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry 4</p> <p>CHE 113 - Laboratory (for CHE 111) 0</p> <p>CHE 212 - General Chemistry II 4</p> <p>CHE 214 - General Chemistry II Lab 0</p> <p>CHE 302- Career Skills for Chemists 1</p> <p>CHE 322 - Analytical Chemistry 4</p> <p>CHE 323 - Analytical Chemistry Lab 0</p> <p>CHE 331 - Organic Chemistry 3</p> <p>CHE 333 - Organic Chemistry Lab 1</p> <p>CHE 332 - Organic Chemistry II 3</p> <p>CHE 334 - Organic Chemistry Lab II 1</p> <p>CHE 341 - Physical Chemistry 3</p> <p>CHE 342 - Physical Chemistry II 3</p> <p>CHE 343 - Comprehensive Physical Chemistry Lab 1</p> <p>Select one option from the following: 4</p> <p>Option 1.</p> <p>CHE 425 - Instrumental Analysis</p> <p>CHE 426 - Instrumental Analysis Lab</p> <p>Option 2.</p> <p>CHE 451 - Inorganic Chemistry</p> <p>CHE 453 - Inorganic Chemistry Lab</p> <p>Option 3.</p> <p>CHE 360 - Introductory Biochemistry</p> <p>CHE 363 - Introductory Biochemistry</p> <p>Select one course from the following: 2</p> <p>CHE 494 - Capstone Research</p> <p>CHE 498 - Internship</p> <p><u>B. Cognate Requirements</u></p> <p>MAT 210 - Calculus I 4</p> <p>MAT 220 - Calculus II 4</p> <p>MAT 318 - Statistics in the Sciences 3</p> <p>Select one sequence from the following: 8</p> <p>PHY 111/212 - College Physics I & II</p> <p>PHY 112/213 - General University Physics I & II</p>	<p>53 cr</p> <p>34 cr</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>4</p> <p>1</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>4</p> <p>2</p> <p>19 cr</p> <p>4</p> <p>4</p> <p>3</p> <p>8</p>

Current Program		Proposal	
<p>Track I—Chemistry B.S.</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry CHE 113 - Laboratory (for CHE 111) CHE 212 - General Chemistry II CHE 214 - General Chemistry II CHE 322 - Analytical Chemistry CHE 323 - Analytical Chemistry Lab CHE 331 - Organic Chemistry CHE 333 - Organic Chemistry Lab CHE 332 - Organic Chemistry II CHE 334 - Organic Chemistry Lab II CHE 341 - Physical Chemistry CHE 342 - Physical Chemistry II CHE 343 - Comprehensive Physical Chemistry Lab CHE 425 - Instrumental Analysis CHE 426 - Instrumental Analysis Lab CHE 451 - Inorganic Chemistry Select one lab: CHE 453 - Inorganic Chemistry Lab OR CHE 434 - Advanced Organic Chemistry Lab</p> <p>Select one of the following choices: CHE 494 - Capstone Research CHE 498 - Internship</p> <p>Select one of the following sequences</p> <p>OPTION 1. CHE 360 - Introductory Biochemistry CHE 363 - Introductory Biochemistry Lab 400-level Chemistry elective</p> <p>OPTION 2. CHE 461 - Biochemistry CHE 462 - Biochemistry II Select one lab from CHE 463 or CHE 464:</p> <p>One additional 400-level Chemistry elective under advisement</p> <p><u>B. Elective Requirements (None)</u></p> <p><u>C. Cognate Requirements</u></p> <p>BIO 120 - Molecular and Cellular Foundations MAT 210 - Calculus I MAT 220 - Calculus II MAT 318 - Statistics in the Sciences</p> <p>Select one of the following sequences:</p> <p>SEQUENCE 1 PHY 111 - College Physics I Credit: 4 PHY 212 - College Physics II Credit: 4</p> <p>SEQUENCE 2 PHY 112 - General University Physics I Credit: 4 PHY 213 - General University Physics II Credit: 4</p>	<p>70 cr</p> <p>47 cr</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>2</p> <p>7</p> <p>3</p> <p>23 cr</p> <p>4</p> <p>4</p> <p>4</p> <p>3</p> <p>8</p>	<p>Track I—Chemistry B.S.</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry CHE 113 - Laboratory (for CHE 111) CHE 212 - General Chemistry II CHE 214 - General Chemistry II CHE 302- Career Skills for Chemists CHE 322 - Analytical Chemistry CHE 323 - Analytical Chemistry Lab CHE 331 - Organic Chemistry CHE 333 - Organic Chemistry Lab CHE 332 - Organic Chemistry II CHE 334 - Organic Chemistry Lab II CHE 341 - Physical Chemistry CHE 342 - Physical Chemistry II CHE 343 - Comprehensive Physical Chemistry Lab CHE 425 - Instrumental Analysis CHE 426 - Instrumental Analysis Lab CHE 451 - Inorganic Chemistry Select one lab: CHE 453 - Inorganic Chemistry Lab OR CHE 434 - Advanced Organic Chemistry Lab</p> <p>Select one of the following choices: CHE 494 - Capstone Research CHE 498 - Internship</p> <p>Select one of the following sequences</p> <p>OPTION 1. CHE 360 - Introductory Biochemistry CHE 363 - Introductory Biochemistry Lab 400-level Chemistry elective</p> <p>OPTION 2. CHE 461 - Biochemistry CHE 462 - Biochemistry II Select one lab from CHE 463 or CHE 464:</p> <p>One additional 400-level Chemistry elective under advisement</p> <p><u>B. Elective Requirements (None)</u></p> <p><u>C. Cognate Requirements</u></p> <p>BIO 120 - Molecular and Cellular Foundations MAT 210 - Calculus I MAT 220 - Calculus II MAT 318 - Statistics in the Sciences</p> <p>Select one of the following sequences:</p> <p>SEQUENCE 1 PHY 111 - College Physics I Credit: 4 PHY 212 - College Physics II Credit: 4</p> <p>SEQUENCE 2 PHY 112 - General University Physics I Credit: 4 PHY 213 - General University Physics II Credit: 4</p>	<p>71 cr</p> <p>48 cr</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>1</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>2</p> <p>7</p> <p>3</p> <p>23 cr</p> <p>4</p> <p>4</p> <p>4</p> <p>3</p> <p>8</p>

Current Program		Proposal	
<p>Track II—Environmental Chemistry B.S.</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry 4 CHE 113 - Laboratory (for CHE 111) 0 CHE 212 - General Chemistry II 4 CHE 214 - General Chemistry II Lab 0 CHE 322 - Analytical Chemistry 4 CHE 323 - Analytical Chemistry Lab 0 CHE 331 - Organic Chemistry 3 CHE 333 - Organic Chemistry Lab 1 CHE 332 - Organic Chemistry II 3 CHE 334 - Organic Chemistry Lab II 1 CHE 341 - Physical Chemistry I 3 CHE 342 - Physical Chemistry II 3 CHE 343 - Comprehensive Physical Chemistry Lab 1 CHE 425 - Instrumental Analysis 4 CHE 426 - Instrumental Analysis Lab 0 CHE 451 - Inorganic Chemistry 3 CHE 473 - Environmental Chemistry 3</p> <p>Select one of the following choices OPTION 1. CHE 360 - Introductory Biochemistry CHE 363 - Introductory Biochemistry 400-level Chemistry elective</p> <p>OPTION 2. CHE 461 - Biochemistry CHE 462 - Biochemistry II Select one lab: CHE 463 or 464</p> <p>Select one of the following choices: CHE 494 - Capstone Research CHE 498 - Internship</p> <p>Select one of the following two courses: CHE 434 - Advanced Organic Chemistry Lab CHE 453 - Inorganic Chemistry Lab</p> <p>Select one of the following three courses: GCH 436 - Solid Earth Geochemistry GCH 437 - Earth Surface Geochemistry GCH 438 - Isotope Geochemistry</p> <p><u>B. Elective Requirements (None)</u></p> <p><u>C. Cognate Requirements</u></p> <p>MAT 210 - Calculus I 4 MAT 220 - Calculus II 4 MAT 318 - Statistics in the Sciences 3 BIO 120 - Molecular and Cellular Foundations 4 GEO 100 - Physical Geology 3 Biology, geology, or chem elective at 300-400 level 3</p> <p>Select one sequence from the following: Sequence 1. PHY 111 - College Physics I PHY 212 - College Physics II Sequence 2. PHY 112 - General University Physics I PHY 213 - General University Physics II</p>	<p>79-80 cr</p> <p><u>46-47 cr</u></p> <p>4 0 4 0 4 0 3 1 3 1 3 1 4 0 3 3 7</p> <p>2</p> <p>1</p> <p>3-4 cr</p> <p><u>29 cr</u></p> <p>4 4 3 4 3 3 8</p>	<p>Track II—Environmental Chemistry B.S.</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry 4 CHE 113 - Laboratory (for CHE 111) 0 CHE 212 - General Chemistry II 4 CHE 214 - General Chemistry II Lab 0 CHE 302- Career Skills for Chemists 1 CHE 322 - Analytical Chemistry 4 CHE 323 - Analytical Chemistry Lab 0 CHE 331 - Organic Chemistry 3 CHE 333 - Organic Chemistry Lab 1 CHE 332 - Organic Chemistry II 3 CHE 334 - Organic Chemistry Lab II 1 CHE 341 - Physical Chemistry I 3 CHE 342 - Physical Chemistry II 3 CHE 343 - Comprehensive Physical Chemistry Lab 1 CHE 425 - Instrumental Analysis 4 CHE 426 - Instrumental Analysis Lab 0 CHE 451 - Inorganic Chemistry 3 CHE 473 - Environmental Chemistry 3</p> <p>Select one of the following choices OPTION 1. CHE 360 - Introductory Biochemistry CHE 363 - Introductory Biochemistry 400-level Chemistry elective</p> <p>OPTION 2. CHE 461 - Biochemistry CHE 462 - Biochemistry II Select one lab: CHE 463 or 464</p> <p>Select one of the following choices: CHE 494 - Capstone Research CHE 498 - Internship</p> <p>Select one of the following two courses: CHE 434 - Advanced Organic Chemistry Lab CHE 453 - Inorganic Chemistry Lab</p> <p>Select one of the following three courses: GCH 436 - Solid Earth Geochemistry GCH 437 - Earth Surface Geochemistry GCH 438 - Isotope Geochemistry</p> <p><u>B. Elective Requirements (None)</u></p> <p><u>C. Cognate Requirements</u></p> <p>MAT 210 - Calculus I 4 MAT 220 - Calculus II 4 MAT 318 - Statistics in the Sciences 3 BIO 120 - Molecular and Cellular Foundations 4 GEO 100 - Physical Geology 3 Biology, geology, or chem elective at 300-400 level 3</p> <p>Select one sequence from the following: Sequence 1. PHY 111 - College Physics I PHY 212 - College Physics II Sequence 2. PHY 112 - General University Physics I PHY 213 - General University Physics II</p>	<p>80-81 cr</p> <p><u>47-48 cr</u></p> <p>4 0 4 0 1 4 0 3 1 3 3 1 4 0 3 3 7</p> <p>2</p> <p>1</p> <p>3-4 cr</p> <p><u>29 cr</u></p> <p>4 4 3 4 3 3 8</p>

Current Program		Proposal	
<p>Biochemistry Major B.S.</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry 4</p> <p>CHE 113 - Laboratory (for CHE 111) 0</p> <p>CHE 212 - General Chemistry II 4</p> <p>CHE 214 - General Chemistry II Lab 0</p> <p>CHE 322 - Analytical Chemistry 4</p> <p>CHE 323 - Analytical Chemistry Lab 0</p> <p>CHE 331 - Organic Chemistry 3</p> <p>CHE 333 - Organic Chemistry Lab 1</p> <p>CHE 332 - Organic Chemistry II 3</p> <p>CHE 334 - Organic Chemistry Lab II 1</p> <p>CHE 425 - Instrumental Analysis 4</p> <p>CHE 426 - Instrumental Analysis Lab 0</p> <p>CHE 451 - Inorganic Chemistry 3</p> <p>CHE 453 - Inorganic Chemistry Lab 1</p> <p>CHE 461 - Biochemistry 3</p> <p>CHE 463 - Biochemistry Lab 1</p> <p>CHE 462 - Biochemistry II 3</p> <p>CHE 464 - Biochemistry II Lab 1</p> <p>CHE 341 - Physical Chemistry I 3</p> <p>CHE 342 - Physical Chemistry II 3</p> <p>CHE 343 - Comprehensive Physical Chemistry Lab 1</p> <p>Select one of the following two options: 2</p> <p>CHE 494 - Capstone Research</p> <p>CHE 498 - Internship</p> <p><u>B. Cognate Requirements</u> 31 cr</p> <p>BIO 120 - Molecular and Cellular Foundations 4</p> <p>BIO 310 - Microbiology 4</p> <p>BIO 315 - Genetics 3</p> <p>BIO 316 - Laboratory in Genetics 1</p> <p>MAT 210 - Calculus I 4</p> <p>MAT 220 - Calculus II 4</p> <p>MAT 318 - Statistics in the Sciences 3</p> <p>Select one sequence from the following: 8</p> <p>PHY 111/212 - College Physics I & II</p> <p>PHY 112/213 - General University Physics I & II</p>	<p>75 cr</p> <p>44 cr</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>2</p> <p>31 cr</p> <p>4</p> <p>4</p> <p>3</p> <p>1</p> <p>4</p> <p>4</p> <p>3</p> <p>8</p>	<p>Biochemistry Major B.S.</p> <p><u>A. Core Requirements</u></p> <p>CHE 111 - General Chemistry 4</p> <p>CHE 113 - Laboratory (for CHE 111) 0</p> <p>CHE 212 - General Chemistry II 4</p> <p>CHE 214 - General Chemistry II Lab 0</p> <p>CHE 302- Career Skills for Chemists 1</p> <p>CHE 322 - Analytical Chemistry 4</p> <p>CHE 323 - Analytical Chemistry Lab 0</p> <p>CHE 331 - Organic Chemistry 3</p> <p>CHE 333 - Organic Chemistry Lab 1</p> <p>CHE 332 - Organic Chemistry II 3</p> <p>CHE 334 - Organic Chemistry Lab II 1</p> <p>CHE 425 - Instrumental Analysis 4</p> <p>CHE 426 - Instrumental Analysis Lab 0</p> <p>CHE 451 - Inorganic Chemistry 3</p> <p>CHE 453 - Inorganic Chemistry Lab 1</p> <p>CHE 461 - Biochemistry 3</p> <p>CHE 463 - Biochemistry Lab 1</p> <p>CHE 462 - Biochemistry II 3</p> <p>CHE 464 - Biochemistry II Lab 1</p> <p>CHE 341 - Physical Chemistry I 3</p> <p>CHE 342 - Physical Chemistry II 3</p> <p>CHE 343 - Comprehensive Physical Chemistry Lab 1</p> <p>Select one of the following two options: 2</p> <p>CHE 494 - Capstone Research</p> <p>CHE 498 - Internship</p> <p><u>B. Cognate Requirements</u> 31 cr</p> <p>BIO 120 - Molecular and Cellular Foundations 4</p> <p>BIO 310 - Microbiology 4</p> <p>BIO 315 - Genetics 3</p> <p>BIO 316 - Laboratory in Genetics 1</p> <p>MAT 210 - Calculus I 4</p> <p>MAT 220 - Calculus II 4</p> <p>MAT 318 - Statistics in the Sciences 3</p> <p>Select one sequence from the following: 8</p> <p>PHY 111/212 - College Physics I & II</p> <p>PHY 112/213 - General University Physics I & II</p>	<p>76 cr</p> <p>45 cr</p> <p>4</p> <p>0</p> <p>4</p> <p>0</p> <p>1</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>1</p> <p>4</p> <p>0</p> <p>3</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>3</p> <p>3</p> <p>1</p> <p>2</p> <p>31 cr</p> <p>4</p> <p>4</p> <p>3</p> <p>1</p> <p>4</p> <p>4</p> <p>3</p> <p>8</p>