

# B.S. in Translational Biomedical Sciences

## Academic Program Guide for **New First-Year Students** (Effective Fall 2019)

Department of Molecular & Cellular Biosciences ([mcb@rowan.edu](mailto:mcb@rowan.edu))

*Students who entered Rowan University prior to Fall 2018 should follow the guide for their program and start year in consultation with their advisor.*

### Rowan University Graduation Requirements for all Majors / Degrees

- Students must complete at least 120 semester hours (sh) of coursework that apply to their Rowan University degree.
- Students must have a cumulative GPA of at least 2.0 in Rowan University coursework. (Transfer courses/credit do not count toward the RU GPA.)
- A minimum of 30 sh of coursework must be completed at/through Rowan University.
- Only grades of "D-" or above may apply to graduation/degree requirements. (Some programs may set higher minimums.)
- Students must meet the Rowan Core and Rowan Experience Requirements.
  - An individual course can potentially satisfy one Rowan Core literacy and/or multiple Rowan Experience attributes.
  - Rowan Core and Rowan Experience designations are listed in course details in Section Tally ([www.rowan.edu/registrar](http://www.rowan.edu/registrar)) and may also be searched on that site under "Attributes." A list of Rowan Core courses is here: <https://confluence.rowan.edu/display/AS/Rowan+Core+Course+List>.
- Students must apply for graduation and should do so for the term in which they will complete all program requirements.

### Program-Specific Graduation Requirements for this Major / Degree

- Students must receive a grade of C or better in all courses satisfying Major requirements.

### Rowan Core Requirements<sup>1</sup>

*Students must satisfy all six Rowan Core Literacies. A minimum total of 3 sh of coursework is required to satisfy each Literacy.*

*With the exception of the 9 sh counted here for Communicative Literacy, credits attached to the courses in this section will apply elsewhere.*

- ☐ (COML) Communicative Literacy: *Must be met by the following three courses or their official equivalents:*
  - ☐ COMP 01111 College Composition I (3 sh)    ☐ COMP 01112 College Composition II (3 sh)    ☐ CMS 04205 Public Speaking (3 sh)
- ☐ (ARTL) Artistic Literacy    *Recommendation from major:*
- ☐ (GLBL) Global Literacy    *Recommendation from major:*
- ☐ (HURL) Humanistic Literacy    *Recommendation from major:*
- ☐ (QNTL) Quantitative Literacy    *Recommendation from major:* MATH 01130 (3 sh counted under non-program)
- ☐ (SCIL) Scientific Literacy    *Recommendation from major:* CHEM 06100 (3 sh counted under non-program)

Subtotal of credits counted in this section: 9 sh

### Rowan Experience Requirements

*Students must satisfy all three Rowan Experience attributes. Credits attached to the courses in this section will apply elsewhere.*

- ☐ (LIT) Broad-Based Literature Attribute    *Recommendation from major:*
- ☐ (WI) Writing Intensive Attribute    *Recommendation from major:* PHIL 09369-WI, PHIL 09341-WI, or PHIL 09376-WI (3 sh counted under non-program)
- ☐ (RS) Rowan Seminar Attribute<sup>2</sup>    *Recommendation from major:* COMP 01111 College Composition I-RS (3 sh counted under Rowan Core)

### Non-Program Courses (19 sh)

*Courses in this section cannot be in the major department.*

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
PHIL 09369, PHIL 09341, or PHIL 09376	Philosophy of Science, Biomedical Ethics or Philosophy of Medicine	PHL 09369 satisfies Humanistic Literacy; all 3 courses satisfy WI requirement			3
PHYS 00220	Intro Mechanics				4
PHYS 00222 or PHYS 00221	Intro Electricity/Magnetism or Intro Thermodyn/Flu/WVS/Optics				4
CHEM 06100	Chemistry I	Satisfies Scientific Literacy & RS requirement			4
MATH 01130	Calculus I	Satisfies Quantitative Literacy			4
					Subtotal: 19 sh

<sup>1</sup> The Rowan Core requirements are waived for transfer students with an earned A.A. or A.S. degree from a NJ community/county college.

<sup>2</sup> The Rowan Seminar requirement is waived for all students transferring 24 or more approved credits into Rowan University at the time of initial entry.

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## Major Requirements (83 sh)

### SUMMARY OF MAJOR REQUIREMENTS

- 16 sh of Foundational Courses
- 18 sh of Mid-Level Courses
- 32 sh of Upper-Level Courses
- 17 sh of TBS Restricted Electives
- 83 sh total

### FOUNDATIONAL COURSES

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
CHEM 06101	Chemistry II				4
MATH 01131	Calculus II				4
MCB 01101	Foundations in Biology for Biomedical Sciences I				4
MCB 01102	Foundations in Biology for Biomedical Sciences II				4
					Subtotal: 16 sh

### MID-LEVEL COURSES

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
CHEM 07200	Organic Chemistry I				4
CHEM 07203	Organic Chemistry II for BMS				4
TBS 01105	Intro Biomed Science I				2
TBS 01110	Intro Biomed Science II				2
STAT 02284	Statistics for Biomed Sciences				3
TBS 01220	Translational Biomedical Research I				3
					Subtotal: 18 sh

### UPPER-LEVEL COURSES

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
CHEM 07348	Biochemistry				4
TBS 01315	Instrumentation for Biomedical Sciences				3
MCB 01306	Translational Cell Biology				3
TBS 01230	Translational Biomedical Research II				3
TBS 01320	Translational Biomedical Research III				3
TBS 01330	Translational Biomedical Research IV				3
MCB 01334	Medical Biochemistry				3
MCB 01360	Biophysics I				4
TBS 01450	Biomedical Frontiers Seminar I				1
TBS 01451	Biomedical Frontiers Seminar II				1
MCB 10345	Human Physiology				4
					Subtotal: 32 sh

### TBS RESTRICTED ELECTIVES

Choose five courses in consultation with advisor. At least two TBS Restricted Electives must be 4 sh (laboratory) courses.

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
<input type="radio"/>	BINF 05360	Programming for Molecular Biology				3
<input type="radio"/>	BINF 07399	Bioinformatics – Biochemical Applications				3
<input type="radio"/>	BIOL 01428	Developmental Biology				4
<input type="radio"/>	BIOL 01430	Advanced Cell Biology				4
<input type="radio"/>	BIOL 11330	Microbiology				4
<input type="radio"/>	BIOL 22335	Genetics				4
<input type="radio"/>	CHEM 05430	Advanced Topics in Chemistry	Special permission via advising based on topic			3
<input type="radio"/>	CHEM 06301	Inorganic Chemistry				3
<input type="radio"/>	CHEM 07357	Chemical Biology				3
<input type="radio"/>	CHEM 07405	Introduction to Polymer Chemistry				3
<input type="radio"/>	CHEM 07410	Medicinal Chemistry				3
<input type="radio"/>	CHEM 07431	Advanced Topics in Biochemistry	Special permission via advising based on topic			3

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<input type="radio"/>	CHEM 07464	Advanced Organic Chemistry I WI				3
<input type="radio"/>	CHEM 07470	Organic Spectroscopic Analysis				3
<input type="radio"/>	CHEM 07490	General Aspects of Pharmacology				3
<input type="radio"/>	CHEM 07492	Pharmaceutical Chemistry				3
<input type="radio"/>	CHEM 09411	Electrochemistry				3
<input type="radio"/>	CHEM 09420	Supramolecular Chemistry				3
<input type="radio"/>	MCB 01407	Molecular Microbiology				4
<input type="radio"/>	MCB 01414	General Aspects of Infectious Agents				3
<input type="radio"/>	MCB 01421	Fundamentals in Cell Culture Techniques				4
<input type="radio"/>	MCB 01435	Cell Culture Technology				4
<input type="radio"/>	MCB 10481	Cellular & Molecular Neuroscience				3
<input type="radio"/>	MCB 11338	Immunology				4
<input type="radio"/>	MCB 22410	Concepts in Human Genetics				4
<input type="radio"/>	MCB 22450	Molecular Genetics				4
<input type="radio"/>	PHYS 00300	Modern Physics				4
<input type="radio"/>	PHYS 00320	Electricity & Magnetism I				4
<input type="radio"/>	PHYS 00321	Electricity & Magnetism II				3
<input type="radio"/>	PHYS 00325	Electric Circuits				4
<input type="radio"/>	PHYS 00340	Optics and Light				4
<input type="radio"/>	PHYS 00371	Biophysics II: Biomaterials				3
<input type="radio"/>	PHYS 00410	Quantum Mechanics I				4
<input type="radio"/>	PHYS 00411	Quantum Mechanics II				3
<input type="radio"/>	PHYS 00430	Statistical Physics				3
<input type="radio"/>	PHYS 00470	Selected Topics in Advanced Physics	Special permission via advising based on topic			3
<input type="radio"/>	PHYS 00475	Radiation Physics				3
<input type="radio"/>	PSY 10315	Physiological Psychology				3
<input type="radio"/>	PSY 10380	Cognitive Neuroscience				3
<input type="radio"/>	TBS 01370	Advanced Biomedical Instrumentation				4
<input type="radio"/>	TBS 01420	Translational Biomedical Research V				3
<input type="radio"/>	TBS 01430	Translational Biomedical Research VI				3

Subtotal: 17 sh

## Free Electives for this Major/Degree (9 sh)

Students should choose Free Electives that satisfy any Rowan Core or Rowan Experience requirements that are not fulfilled by Major or Non-Program courses.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits

Subtotal: 12 sh

**Total Program Credits Required for this Major / Degree: 120 SH**