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Executive Summary: Associate of Science in Applied Science

The Associate of Science (AS) in Applied Science program is designed to prepare deaf and hard-of-hearing students who are close to, but not fully ready for, direct entry into a baccalaureate-level program in science with a pathway for completing the coursework taken during the first two years of certain Bachelor of Science (BS) programs in RIT's College of Science (COS) or College of Health Sciences and Technology (CHST). By combining preparatory studies in math and English with baccalaureate-level science, math, and liberal arts courses, students can qualify to transfer as juniors into a bachelor's program in biochemistry, biology, biomedical sciences, chemistry, and environmental science depending on the specific coursework taken for the AS degree. Articulation agreements between NTID, COS, and CHST have been signed and are included in the degree proposal.

This degree program has been designed using the existing course requirements for five COS and CHST baccalaureate majors and adapting them for how students who are currently admitted into NTID's science pre-baccalaureate program begin their studies at RIT. To ensure that students have proper foundations in English and mathematics, courses such as Critical Reading & Writing (UWRT-100), Trigonometry (NMTH-220), Elementary Statistics (NMTH-250), and Advanced Mathematics (NMTH-275) are available to students depending on their initial placements. Once these courses have been completed, a student will continue with Writing Seminar (UWRT-150) and COS calculus and statistics as required by the BS program. During the first year of the degree program, students will also enroll in one introductory COS biology or chemistry sequence. During the second year, students will enroll in several science and math sequences as required by their intended BS major and they will also complete any remaining liberal arts coursework for the associate degree.

The proposed AS program has several important advantages that can impact recruitment and retention. First, it will provide deaf and hard-of-hearing students with rigorous academic preparation undergirded by a strong system of access and support services that most other schools do not have. RIT has a proven history of educating such students in either separate classrooms at NTID or in mainstream classrooms in the university's other colleges. Through this model, NTID faculty members use strategies such as sign language and spoken English for direct instruction in classes with 12 or fewer students. For mainstream coursework, NTID faculty members serve as tutors for students who are enrolled in baccalaureate-level courses and the NTID Department of Access Services provides interpreters, real-time captionists, and notetakers. Second, because of the articulation agreements that have been developed as part of this proposal and because of the intentional alignment with existing RIT BS programs, all (100%) credit earned toward the AS degree will count toward the RIT BS degree. Students who undertake a similar program at a community college can expect neither such a high level of credit transfer nor such a strong system of support that is intentionally focused on their academic and personal success.

On subsequent pages are shown the general program mask for the AS in Applied Science program as well as the specific courses required for each of the five tracks that lead to a BS degree program.

PROGRAM COURSES AND SCHEDULE

Table 1a: Undergraduate General Program Mask:

Term: Fall 1		Check course classification(s)				Term: Spring 1					
Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)	Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)
NCAR-010 Freshman Seminar	0					LAS Elective 5	3	X			
LAS Perspective 6 (CHMG-141 General & Analytical Chemistry I or BIOL-101 General Biology I)*	3	X			Co-requisite CHMG-145 or BIOL-103	Professional Elective 1 (CHMG-142 General & Analytical Chemistry II or BIOL-102)*	3		X		CHMG-141 or BIOL-101 Co-requisite : CHMG-146 or BIOL-104
Professional Elective Lab (CHMG-145 General & Analytical Chemistry I Lab or BIOL-103 General Biology I Lab)	1		X		Co-requisite CHMG-141 or BIOL-101	Professional Elective 1 Lab (CHMG-146 General & Analytical Chemistry II Lab or BIOL-104 General Biology II Lab)*	1		X		CHMG-141 and 145 Co-requisite: CHMG-142 or BIOL-102
LAS First Year Elective (UWRT-100 Critical Reading and Writing if required based on placement test)	3	X				FYW UWRT-150 Writing Seminar (or other FYW course)	3	X			UWRT-100 or placement
LAS Elective 1 Math (NMTH-275 Advanced Mathematics)*	3	X			NTID Math Placement Score ≥ 40	LAS Elective 2 Math (NMTH-220 Trigonometry or NMTH 250 Elementary Statistics)*	3	X			NTID Math Placement Score ≥ 40
LAS Perspective 1 Wellness	3	X				LAS Perspective 2	3	X			
	0										
Term credit total:	13	12	1			Term credit total:	16	12	4		
Term: Fall 2		Check course classification(s)				Term: Spring 2					
Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)	Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)
Professional Elective 2	3		X			Professional Elective 4	3		X		
Professional Elective 2 Lab	1		X			Professional Elective 4 Lab	1		X		
Professional Elective 3	3	X	X			Professional Elective 5	3		X		
Professional Elective 3 Lab	1		X			Professional Elective 5 Lab	1		X		
LAS Elective 3 Math *†	3	X			MATH-161: C- or better in NMTH-275 MATH-171: C- or better in NMTH-220 and NMTH-275	Professional Elective 6	3		X		
LAS Perspective 3	3	X				LAS Perspective 4	3	X			
LAS Elective 5	3	X									
Term credit total:	17	9	8			Term credit total:	14	3	11		
Program Totals:					Credits:	Major: 24					Elective & Other: 0
					60						

* The science course taken in the first semester of the first year satisfies the P-6 (Scientific Principles) requirement. The three math/statistics courses count as general education electives for the A.S. degree and as free electives or toward the P-7 (Mathematical) requirement for the B.S. degree depending on the program.

† Students take MATH-161 (Applied Calculus) or MATH-171 (Calculus A) depending on their focus area. Students may need to take additional math coursework upon entry to the B.S. program as required by the specific major.

‡ This program includes two unspecified LAS Elective courses. Students may wish to take courses that will apply toward the required B.S. immersion and, if they do so, should be mindful to select an immersion that is compatible with the intended baccalaureate program. LAS Elective courses that do not apply toward an immersion may count toward the LAS Electives or Open Electives allotment in the B.S. degree.

A full tabulation of the LAS P6 (*), LAS electives (‡) and professional electives (§) required for each of the five science focus areas is as follows.

BIOCHEMISTRY FOCUS	
Course Number	Course Title
CHMG-141 *	General & Analytical Chemistry I
NMTH-275 ‡	Advanced Mathematics
NMTH-220 ‡	Trigonometry
MATH-171 ‡	Calculus A
CHMG-142 §	General & Analytical Chemistry II
CHMG-145 §	General & Analytical Chemistry I Lab
CHMG-146 §	General & Analytical Chemistry II Lab
CHMO-231 §	Organic Chemistry I
CHMO-235§	Organic Chemistry I Lab
CHMO-232 §	Organic Chemistry II
CHMO-236 §	Organic Chemistry II Lab
BIOL-101 §	General Biology I
BIOL-102 §	General Biology II
BIOL-103 §	General Biology I Lab
BIOL-104 §	General Biology II Lab
MATH-172 §	Calculus B

BIOLOGY FOCUS	
Course Number	Course Title
BIOL-101*	General Biology I
NMTH-275 ‡	Advanced Mathematics
NMTH 250 ‡	Elementary Statistics
MATH 161 ‡	Applied Calculus
BIOL-102 §	General Biology II
BIOL-103 §	General Biology I Lab
BIOL-104 §	General Biology II Lab
BIOL-201 §	Cellular and Molecular Biology
BIOL-240 or BIOL-265 §	General Ecology or Evolutionary Biology
CHMG-141 §	General & Analytical Chemistry I
CHMG-142 §	General & Analytical Chemistry II
CHMG-145 §	General & Analytical Chemistry I Lab
CHMG-146 §	General & Analytical Chemistry II Lab
STAT-145 §	Introduction to Statistics I

BIOMEDICAL SCIENCES FOCUS	
Course Number	Course Title
BIOL-101*	General Biology I
NMTH-275 ‡	Advanced Mathematics
NMTH-250 ‡	Elementary Statistics
MATH-161 ‡	Applied Calculus
BIOL-102 §	General Biology II
BIOL-103 §	General Biology I Lab
BIOL-104 §	General Biology II Lab
MEDS-250 §	Human Anatomy and Physiology I
MEDS-251 §	Human Anatomy and Physiology II
CHMG-141 §	General & Analytical Chemistry I
CHMG-142 §	General & Analytical Chemistry II
CHMG-145 §	General & Analytical Chemistry I Lab
CHMG-146 §	General & Analytical Chemistry II Lab
STAT-145 §	Introduction to Statistics I

CHEMISTRY FOCUS	
Course Number	Course Title
CHMG-141*	General & Analytical Chemistry I
NMTH-275 ‡	Advanced Mathematics
NMTH-220 ‡	Trigonometry
MATH-171 ‡	Calculus A
MATH-172 §	Calculus B
CHMG-142 §	General & Analytical Chemistry II
CHMG-145 §	General & Analytical Chemistry I Lab
CHMG-146 §	General & Analytical Chemistry II Lab
CHMO-231 §	Organic Chemistry I
CHMO-235 §	Organic Chemistry I Lab
CHMO-232 §	Organic Chemistry II
CHMO-236 §	Organic Chemistry II Lab
CHMA-161 §	Quantitative Analysis
CHMA-165 §	Analytical Methods Lab
PHYS-211A §	University Physics IA

ENVIRONMENTAL SCIENCE FOCUS	
Course Number	Course Title
BIOL-101*	General Biology I
NMTH-275 ‡	Advanced Mathematics
NMTH-250 ‡	Elementary Statistics
MATH-161 ‡	Applied Calculus
BIOL-102 §	General Biology II
BIOL-103 §	General Biology I Lab
BIOL-104 §	General Biology II Lab
ENVS-101 §	Concepts of Environmental Science
BIOL-240 §	General Ecology
CHMG-141 §	General & Analytical Chemistry I
CHMG-142 §	General & Analytical Chemistry II
CHMG-145 §	General & Analytical Chemistry I Lab
CHMG-146 §	General & Analytical Chemistry II Lab
STAT-145 §	Introduction to Statistics I