

Associate of Science in Applied Science

National Technical Institute for the Deaf

AS in Applied Science - Introduction

Program description:

An associate-level degree-granting pathway for qualified NTID-supported students that will lead to entry into a Bachelor of Science program in biochemistry, biology, biomedical sciences, chemistry, or environmental science in RIT's College of Science or College of Health Sciences and Technology.

AS in Applied Science - Rationale

- Provide a more formalized and degree-granting pathway to those COS/CHST BS degrees into which a majority of NTID science pre-baccalaureate students currently matriculate.
- Allow RIT/NTID to compete with community colleges that already offer the same kind of two-year degree.
- Provide a degree-granting pathway for students who do not complete all the requirements for a COS/CHST BS degree.

AS in Applied Science - Rationale

All NTID pre-baccalaureate (“pre-bacc”) programs are “available to students who are accepted by NTID and are close to, but not fully ready for, direct entry into a baccalaureate-level program through one of the other colleges of RIT.”

College of Science (COS) and College of Health Sciences and Technology (CHST) Admission Requirements

- COS: ACT composite of 27-32 (middle 50% of accepted applicants)
- CHST: ACT composite of 26-30 (middle 50% of accepted applicants)
- Four years of high school math (algebra, geometry, trigonometry, pre-calculus)
- At least two years of high school science (biology and chemistry, usually)

NTID Science Pre-Bacc Admission Requirements

- ACT composite of at least 21 with all subscores at least 19
- Placement into at least Critical Reading & Writing (UWRT-100) and Advanced Math (NMTH-275)

AS in Applied Science – Mission and Vision (RIT and NTID)

- RIT’s Strategic Plan 2015-2025 has specific objectives for increasing the number of deaf and hard-of-hearing STEM graduates.
 - Difference Maker I.3: *RIT will further enhance its position as the preeminent academic institution and model for professional and technical education for people who are deaf or hard of hearing around the world.*
 - Objective I.3.1: *Operationalize “Strategic Decisions 2020: Shaping NTID’s Future Through Innovation.”*
 - Difference Maker III.5 (RIT Priority): *Within ten years, lead private U.S. universities in the number of STEM undergraduates enrolled at and graduating from RIT.*
 - Objective III.5.1: *RIT will be the largest producer of female, underrepresented male, and deaf or hard-of-hearing STEM graduates among all private colleges in the U.S.*
- NTID’s Strategic Decisions 2020 calls for additional “A+B” programs in the NTID portfolio.
 - *Recommend additional 2+2/2+3 transfer programs ... particularly in partnership with those colleges of RIT where such programs do not yet exist.*

AS in Applied Science – Competing Programs and RIT’s Advantage

- Most community colleges have analogous associate-level programs.
 - NTID’s non-degree-granting pre-bacc program is seen as less favorable.
- RIT/NTID has numerous advantages for deaf and hard-of-hearing students.
 - Existing instructional and advising experience from the science pre-bacc program.
 - Existing access services infrastructure.
 - NTID faculty serve as tutors for all COS and CHST courses included in program.
 - Transfer from AS to BS program is internal to RIT.
 - All (100%) credit earned in the AS program transfers to the BS degree.

AS in Applied Science – Curricular Design and Novel Curricular Features

- Students take one two-semester COS lecture/lab course sequence during the first year.
 - General & Analytical Chemistry (Chemistry and Biochemistry tracks)
 - General Biology (Biology, Biomedical Sciences, and Environmental Science tracks)
- Program includes foundational English and math coursework.
 - Algebra, Trigonometry, and Statistics
 - Critical Reading & Writing (UWRT-100) and Writing Seminar (UWRT-150)
- Second-year coursework serves as a bridge into Bachelor of Science program.
 - Students continue science coursework by taking sophomore-level sequence.
 - Students start additional freshman-level science coursework needed for BS program.
- Program includes LAS P1-P4 and P6 coursework as well as a general education allotment.

AS in Applied Science – Curricular Design and Structure

Liberal Arts and English (36 SCH)	“Major” (24 SCH)
<ul style="list-style-type: none">• LAS First Year Elective (3 SCH)• Writing Seminar (3 SCH)• P1-P4 LAS Perspectives (12 SCH)• P6 LAS Science Perspective (3 SCH)• LAS Math “Electives” (9 SCH)• LAS General Education Electives (6 SCH)	<ul style="list-style-type: none">• Professional Electives (24 SCH)

- All credits earned apply toward the BS degree.
- Traditional on-campus mode of delivery with availability of online sections for some courses.
- Summer, international, and experiential opportunities are not explicitly built into this program but are available for interested students.

AS in Applied Science – Curricular Design and Structure

Table 1a: Undergraduate General Program Mask:

Term: Fall 1		Check course classification(s)				
Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)	
NCAR-010 Freshman Seminar	0					
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 Lab (CHMG-145 General & Analytical Chemistry I Lab or BIOL-103 General Biology I Lab)	1		X		Co-requisite CHMG-141 or BIOL-101	
LAS First Year Elective (UWRT-100 Critical Reading and Writing if required based on placement test)	3	X				
LAS Elective 1 Math (NMTH-275 Advanced Mathematics)*	3	X			NTID Math Placement Score \geq 40	
LAS Perspective 1 Wellness	3 0	X				
Term credit total:	13	12	1			
Term: Fall 2		Check course classification(s)				
Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)	
Professional Elective 2	3		X			
Professional Elective 2 Lab	1		X			
Professional Elective 3	3		X			
Professional Elective 3 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	
LAS Perspective 3	3	X				
LAS Elective §	3	X				
Term credit total:	17	9	8			
Program Totals:	Credits: 60	Liberal Arts & Sciences: 36				
Term: Term: Spring 1		Check course classification(s)				
Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)	
LAS Elective §	3	X				
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 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	
FYW UWRT-150 Writing Seminar (or other FYW course)	3	X			UWRT-100 or placement	
LAS Elective 2 Math (NMTH-220 Trigonometry or NMTH 250 Elementary Statistics)*	3	X			NTID Math Placement Score \geq 40	
LAS Perspective 2	3	X				
Term credit total:	16	12	4			
Term: Spring 2		Check course classification(s)				
Course Number & Title	CR	LAS	Maj	New	Prerequisite(s)	
Professional Elective 4	3		X			
Professional Elective 4 Lab	1		X			
Professional Elective 5	3		X			
Professional Elective 5 Lab	1		X			
Professional Elective 6	3		X			
LAS Perspective 4	3	X				
Term credit total:	14	3	11			
Major: 24	Elective & Other: 0					

* 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.

AS in Applied Science – Enrollment Projections

Year	Internal Transfer	Would come to NTID without program	New to NTID	Persisting	Total
1	1	7	2		10
2	1	7	3	9	20
3	1	7	4	10	22
4	1	7	5	11	24
5	1	7	6	12	26

AS in Applied Science – Budget Projections

- Faculty/Staff: Use existing NTID, COS, CHST, and COLA faculty members.
 - NTID Cost Model Table 1 footnotes explain the FTE for non-NTID faculty/staff if there are no seats available in current course offerings.
 - Impacted college deans have reviewed and approved the proposal, including the FTE projections.
- Equipment/Space: Use existing NTID, COS, CHST, and COLA equipment and space.
- Incremental Resources: NTID Cost Model Tables 1 and 5
 - Computer and travel expenses for NTID faculty associated with program
 - Tuition payments for RIT credits and overhead (RIT indirect costs)
- Break-Even Point: Year 1
 - Like all NTID programs, federal appropriations bridge the financial gap between tuition revenue and the total cost of the program.

Discussion