

INDUSTRIAL BIOTECHNOLOGY, B.A.S. (121 Credits)

Meta-major: STEM

The **Industrial Technology B.A.S.** articulation agreement between Florida Gateway College (FGC) and Santa Fe College (SF) provides a pathway for students to earn their Associate of Arts (A.A.) degree with FGC and transfer to earn their baccalaureate degree in Industrial Biotechnology with SF.

For more information about the A.A. program, visit www.fgc.edu and your academic advisor.

For more information regarding the baccalaureate program, visit the [Industrial Biotechnology SF](#) page.

This pathway presents classes needed to earn your AA with FGC and your baccalaureate degree in **Industrial Biotechnology** with SF. It does not represent a contract, nor does it guarantee course availability or entry into the program. As always, visit your academic advisor each semester to help you keep on track for graduation.

Note: All A.A. degrees must satisfy the Foreign Language requirement for graduation. Please see catalog

**Articulation Agreement****SEMESTER BY SEMESTER MAP FOR FULL-TIME STUDENTS**

LOWER DIVISION SEMESTER 1 AT FGC		ACTION ITEMS
ENC 1101 – Freshman Composition I ^{iv} (<i>Communication core</i>)		<ul style="list-style-type: none">Meet with your advisor to confirm academic and career goals by the end of the semester.REQUIRED: Complete the Computer Competency course within Canvas.Signup for and pass the Florida Civic Literacy Exam.Consult your advisor to make sure you have met the Foreign Language requirement.At the end of the semester, begin research on college and universities where you want to seek to transfer. Meet with a career advisor/coach to research your career options with a degree in Biotechnology.Remember to start collecting artifacts from your courses for your Academic & Career Portfolio in SLS 2370Begin applying for Financial Aid and Scholarships<ul style="list-style-type: none">You can start the FAFSA in October for the next academic year. (<i>i.e., in October 2023, you can complete the FAFSA for if you plan to register for classes at a college or university Fall 2024</i>)
Choose one: AMH 2020 – US History from 1865 OR POS 1041 – American Government ^{iv} (<i>Social Science & civic literacy</i>)		
MAC 1105 – College Algebra ^{vii} (<i>Mathematics core</i>)		
BSC 2010C – General Biology I with Lab (<i>Biological Science Core</i>) (4 cr)		
CHM 2045/L – General Chemistry I/Lab (<i>Physical Science</i>) (4 cr)		
TOTAL SEMESTER CREDIT HOURS: 17		
LOWER DIVISION SEMESTER 2 AT FGC		ACTION ITEMS
Choose one: ENC 1102 – Freshman Composition II OR CRW 2001 – Creative Writing OR ENC 1141 – Writing about Literature ^{iv} (<i>Communication</i>)		<ul style="list-style-type: none">Meet with your advisor to confirm or update your academic/career pathway and program of study.Ask about transfer advising to discuss options to pursue the bachelor's degree.Continue collecting artifacts from courses for your Academic & Career Portfolio in SLS 2370
MAC 2233 – Survey of Calculus ^{iv} (<i>Mathematics Core</i>) (4 cr)		
BSC 2011C – General Biology II with Lab (<i>Elective Prerequisite</i>)		
CHM 2046/L – General Chemistry II/Lab ^{iv} (<i>Elective Prerequisite</i>) (4 cr)		
TOTAL SEMESTER CREDIT HOURS: 15		
LOWER DIVISION SEMESTER 3 AT FGC		ACTION ITEMS
Choose one: LIT 2000 – Introduction to Literature OR Any general education AML, ENL, LIT, PHI or REL courses (<i>Humanities</i>) ^{iv}		<ul style="list-style-type: none">Begin applying to your top choice universities.Begin applying for Financial Aid and Scholarships.<ul style="list-style-type: none">You can start the FAFSA in October for the next academic year. (<i>i.e., in October 2023, you can complete the FAFSA for if you plan to register for classes at a college or university Fall 2024</i>)Check with your advisor for important deadlines and dates.
SLS 2370 – Personal Academic & Career Engagement ^{iv} (3rd Soc Sci)		
CHM 2210/L – Organic Chemistry I/Lab ^v (<i>Elective Prerequisite</i>) (4 cr)		
STA 2023 – Elementary Statistics ^{iv} (<i>Elective Prerequisite</i>)		
PHY 2053C – General Physics I (<i>Elective Prerequisite</i>) (4 cr)		
TOTAL SEMESTER CREDIT HOURS: 17		

LOWER DIVISION SEMESTER 4 AT FGC	ACTION ITEMS
Choose one: SPC 2608 – Public Speaking OR SPC 1017 – Oral Communications OR SPC 1061 – Introduction to Academic and Professional Speaking ^{iv} (Communications)	<ul style="list-style-type: none">After reviewing your final program of study, apply for Graduation.<ul style="list-style-type: none">Meet with your advisor to apply for graduation for your degree.Sign up for commencement.Meet with your advisor about transfer to SF Industrial Biotechnology program.Request final transcripts sent to SF.Congratulations, FGC A.A. graduate!
Choose one: MUL 1010 – Music Appreciation OR THE 2000 – Theatre Appreciation OR ARH 1000 – Art Appreciation OR HUM 2020 – Introduction to Humanities ^{iv} (Humanities core)	
Choose one: PSY 2012 – General Psychology OR SYG 1000 – Introduction to Sociology OR SYG 2300 – Introduction to Social Psychology OR Any DEP or ECO course (Social Science) ^{iv}	
CHM 2211/L – Organic Chemistry II/Lab ^{vi} (Elective Prerequisite) (4 cr)	
PHY 2054C – General Physics II (Elective Prerequisite) (4 cr)	
TOTAL SEMESTER CREDIT HOURS: 17	
A.A. PATHWAY TOTAL: 66 ^{vii} CREDIT HOURS	

UPPER DIVISION SEMESTER 1 AT SF	ACTION ITEMS
BCH 3023 – Biochemistry	<ul style="list-style-type: none">Meet with your SF advisor to confirm or update your academic/career pathway and program of study.
PCB 3703C – Human Physiology	
PCB 3063 – Genetics	
BSC 2426C – Biotechnology Methods I	
TOTAL SEMESTER CREDIT HOURS: 12	
UPPER DIVISION SEMESTER 2 AT SF	ACTION ITEMS
PCB 3134/L – Molecular Biology with Lab (4 cr)	
PCB 4233 – Immunology	
BSC 2423C – Protein Methods	
BOT 4734C – Plant Biotechnology	
TOTAL SEMESTER CREDIT HOURS: 13	
UPPER DIVISION SEMESTER 3 AT SF	ACTION ITEMS
BSC 4422C – Applied Biotechnology	
MCB 4503 – Virology	
HSC 3503 – Toxicology	
TOTAL SEMESTER CREDIT HOURS: 9	
UPPER DIVISION SEMESTER 4 AT SF	ACTION ITEMS
MCB 4653C – Applied Microbiology	<ul style="list-style-type: none">All students selected to enter the Industrial Biotechnology program must successfully complete a Level 2 National and Expanded Background Screening.
PCB 4028 – Molecular Pharmacology	
CHM 4136C – Bioanalytical Chemistry	
BSC 4463 – Seminar (1 cr)	
TOTAL SEMESTER CREDIT HOURS: 10	
UPPER DIVISION SEMESTER 5 AT SF	ACTION ITEMS
ETI 4430 – Computer Aided Manufacturing	<ul style="list-style-type: none">Check with advisor regarding graduation eligibility.<ul style="list-style-type: none">Sign up for commencement.Congratulations, SF B.A.S. graduate!
ETI 3173C – Applied Manufacturing	
BSC 2146C – Cell Culture and Applications	
BSC 4XXX – Research and/or Internship (2 cr)	
TOTAL SEMESTER CREDIT HOURS: 11	
TOTAL AT SF: 55 CREDIT HOURS	
B.A.S. PATHWAY TOTAL: 121 CREDIT HOURS	

ⁱ Degree plans may change in later catalogs. You may use this pathway if you entered the college on or before this date.

ⁱⁱ Students must earn at least 25% of the credit hours (15 hours) required for graduation through instruction by FGC to award the degree.

ⁱⁱⁱ This is not an official degree plan. For official degree requirements, [click here](#).

^{iv} You must earn a grade of "C" or better in all Gordon Rule classes.

^v This course is only offered in the fall term

^{vi} This course is only offered in the spring term

^{vii} If student enrolls ready for MAC 1114/1140, then MAC 1105 is not necessary, bringing the A.A. Pathway credits to 63.