Transfer Plan: NIC to UI

B.S. DEGREE PROGRAM IN BIOLOGICAL ENGINEERING – Catalog Year 2022/23 This plan assumes a student completes the Associate of Science degree at NIC before transferring to UI.

	Course Title/Requirement at NIC	COMMENTS	Credits
YEAR 1 FALL @ NIC		- Community	0.00.00
CHEM 111/111 Lab	Principles of Chemistry I/111 Lab		5
ENGL 101	Writing and Rhetoric I		3
Wellness (GEM 7)	Wellness course	Required course in Engr AS Program of Study at NIC	1-3
MATH 170	Calculus I	required course in English Frogram of Study at the	4
ENGR 123 YEAR 1 SPRING @ NIC	Introduction to Engineering	Substitute for BE 142	3
	introduction to Engineering	Substitute for BE 172	
			16-18
ENGL 102	Writing and Rhetoric II		3
GEM 7F or 7I	First Year Experience or Inst. Designated		3
ENGR 210	Engineering Statics		3
MATH 175	Calculus II		4
CHEM 112/112 Lab	Principles of Chemistry II/112 Lab		5
CITLIVI 112/112 LdD	Principles of Chemistry II/112 Lab		3
VEAD 2 FALL @ NIC			18
YEAR 2 FALL @ NIC COMM 101	Oral Communication		2
ECON 201 or 202	Oral Communication		3
MATH 275	Economics course		3
	Calculus III	C hall to for PE 242	4
ENGR 223	Engineering Analysis	Substitute for BE 242	3
PHYS 211/211 Lab	Engineering Physics I/Lab		5
			18
YEAR 2 SPRING @ NIC Phil 103	Indus to Ethics		2
	Intro to Ethics		3
CHEM 277	Organic Chemistry I		3
CHEM 278	Organic Chemistry I Lab		3
MATH 370	Intro to Ordinary Differential Equations		
MATH 370 Phys 212/212 Lab	Engineering Physics II/Lab	No. 10 No	5
MATH 370	, · · · · ·	Not required for NIC AAS but needed for Biology	
MATH 370 Phys 212/212 Lab	Engineering Physics II/Lab	Not required for NIC AAS but needed for Biology Sequence at UI	5 4
MATH 370 Phys 212/212 Lab	Engineering Physics II/Lab Cells & Evolution of Llife	Sequence at UI	5 4 19
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab	Engineering Physics II/Lab		5 4
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI	Sequence at UI Prerequisites	5 4 19 Credits
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology	Sequence at UI	5 4 19 Credits
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab	Prerequisites BIOL 115/115L, CHEM 111/111L	5 4 19 Credits
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210	5 4 19 Credits 3 2 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite	5 4 19 Credits 3 2 3 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175	5 4 19 Credits 3 2 3 3 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite	5 4 19 Credits 3 2 3 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175	5 4 19 Credits 3 2 3 3 3 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335	5 4 19 Credits 3 2 3 3 3 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3	5 4 19 Credits 3 2 3 3 3 3 17
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335	5 4 19 Credits 3 2 3 3 3 3 17
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335	5 4 19 Credits 3 2 3 3 3 3 17
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310	5 4 19 Credits 3 2 3 3 3 17 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275	5 4 19 Credits 3 2 3 3 3 3 17
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275 TE 1/3	5 4 19 Credits 3 2 3 3 3 17 3 3 15
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275 TE 1/3 CHEM 112/112L, CHEM 277	5 4 19 Credits 3 2 3 3 3 17 3 3 4
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements	Prerequisites BIOL 115/115L, CHEM 111/11L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275 TE 1/3 CHEM 112/112L, CHEM 277 ENGR 240; co-req STAT 301	5 4 19 Credits 3 2 3 3 3 17 3 3 15
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275 TE 1/3 CHEM 112/112L, CHEM 277 ENGR 240; co-req STAT 301 BE 242, ENGR 320, ENGR 335, ENGR 350	5 4 19 Credits 3 2 3 3 3 17 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275 TE 1/3 CHEM 112/112L, CHEM 277 ENGR 240; co-req STAT 301 BE 242, ENGR 320, ENGR 335, ENGR 350 Senior standing	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 1
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491 Elective	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar Technical Elective	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275 TE 1/3 CHEM 112/112L, CHEM 277 ENGR 240; co-req STAT 301 BE 242, ENGR 320, ENGR 335, ENGR 350 Senior standing TE 2/3	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 1 3 3 1 3
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar	Prerequisites BIOL 115/115L, CHEM 111/111L MATH 275 and ENGR 210 ENGR 210, MATH 175, MATH 310 as co-requisite MATH 175 BE 1/3 ENGR 320, ENGR 335 ENGR 210; co-req MATH 310 ENGR 210, MATH 275 TE 1/3 CHEM 112/112L, CHEM 277 ENGR 240; co-req STAT 301 BE 242, ENGR 320, ENGR 335, ENGR 350 Senior standing	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 1
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491 Elective YEAR 4 SPRING @ UI	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar Technical Elective Biological Engineering	Prerequisites	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 14
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491 Elective Elective YEAR 4 SPRING @ UI BE 461	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar Technical Elective Biological Engineering Bioprocess Engineering	Prerequisites	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 14
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491 Elective YEAR 4 SPRING @ UI BE 461 BE 479	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar Technical Elective Biological Engineering Bioprocess Engineering Bioprocess Engineering Engineering Design II	Prerequisites	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 14 3 3 3 14
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491 Elective YEAR 4 SPRING @ UI BE 461 BE 461 BE 479 Elective	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar Technical Elective Bioprocess Engineering Bioprocess Engineering Engineering Design II Technical Elective	Prerequisites	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 14 3 3 3 3 14
MATH 370 Phys 212/212 Lab BIOL 115/115 Lab YEAR 3 FALL @ UI BIOL 250 BIOL 255 ENGR 335 ENGR 350 STAT 301 Elective YEAR 3 SPRING @ UI BE 361 BE 462 ENGR 240 ENGR 320 Elective YEAR 4 FALL @ UI BIOL 380 BE 441 BE 478 BE 491 Elective YEAR 4 SPRING @ UI BE 461 BE 479	Engineering Physics II/Lab Cells & Evolution of Llife Course Title/Requirement at UI General Microbiology General Microbiology Lab Engineering Fluid Mechanics Mechanics of Materials Probability and Statistics Biological Engineering Biotransport Processes Electric Power & Controls Intro to Electrical Circuits Eng. Thermodynamics & Heat Transfer Technical Elective Biochemistry Instrumentation & Measurements Engineering Design I Senior Seminar Technical Elective Biological Engineering Bioprocess Engineering Bioprocess Engineering Engineering Design II	Prerequisites	5 4 19 Credits 3 2 3 3 3 17 3 3 15 4 3 3 14 3 3 3 14