

# Engineering Science

at Benedictine University

## Why study engineering at Benedictine?

Benedictine University and the Illinois Institute of Technology (IIT) have partnered to offer students a chance to take advantage of the strengths of both schools while earning a Bachelor of Science or Bachelor of Arts in Engineering Science from Benedictine and a Bachelor of Science in Engineering from IIT.

## How does the program work?

You must have a minimum 3.0 GPA to be accepted into the Benedictine/IIT engineering program. A minimum of 45 semester hours must be completed at IIT. Once you are accepted into the program, you will be enrolled at both schools simultaneously and will be able to enjoy the benefits of student activities and the use of facilities at both institutions.

Your initial classes are taken exclusively at Benedictine, where you will complete a sequence of courses comprising the Engineering core plus elective courses in social science and humanities. By your fifth semester, you will take courses at both institutions. Most classes during the final four semesters of the program are conducted at IIT's downtown campus.

Your academic work will include courses that are essentially common to all branches of engineering and include calculus, college physics, chemistry, statics, dynamic, computer programming and engineering graphics. You will take liberal arts courses in written and oral communications, technical writing, social science and electives of your choice.

## Fields of study

IIT will prepare you for your specialty in the following fields of study:

- Aerospace Engineering
- Architectural Engineering
- Biomedical Engineering-Cell and Tissue Track
- Biomedical Engineering-Medical Imaging
- Biomedical Engineering-Neural Engineering
- Chemical Engineering
- Civil Engineering
- Computer Engineering
- Electrical Engineering
- Environmental Engineering
- Mechanical Engineering

The Benedictine/IIT connection provides students with a unique opportunity in that they receive an engineering degree while attending a liberal arts university. The liberally-educated graduate is better prepared to compete in an environment where communication skills are rapidly becoming as important as technical ability. This program develops engineers who can communicate technical ideas to society.

# Recommended Program

BenU+IIT (Five-year Aerospace Engineering Program)

B.A. in Engineering Science at Benedictine/B.S. in Aerospace Engineering at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT 101	3 (BenU)
ENGR 120	2 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 124)
Religious Studies/Theology elective	3 (BenU) (Note 1)
	<b>17</b>

## Second Semester

MATH 211	4 (BenU) (MATH 152)
WRIT 102	3 (BenU)
Life Sciences elective	3 (BenU) (Note 2)
CHEM C123 and C124	4 (BenU)
Psychology/Sociology elective	3 (BenU) (Note 1)
	<b>17</b>

## Third Semester

MATH 212	4 (BenU) (MATH 251)
PHYS 211 and 205	5 (BenU) (Note 3)
CMSC 180/181	4 (BenU) (MMAE 100)
SPCH 110	3 (BenU)
	<b>16</b>

## Fourth Semester

MATH 260	4 (BenU) (MATH 252)
PHYS 212 and 206	5 (BenU) (Note 3)
CMSC 200	4 (BenU) (CS 105)
HUMN 220	3 (BenU) (Note 1)
	<b>16</b>

## Fifth Semester

PHYS WI213	3 (BenU) (Note 3)
ENGR 220	3 (BenU) (MMAE 200)
HUMN 230	3 (BenU) (Note 1)
Fine Arts/Musice elective	3 (BenU) (Note 1)
Philosophy elective	3 (BenU) (Note 1)
Business/Economics elective	3 (BenU) Note 1)
	<b>18</b>

## Sixth Semester

MS 201	3 (IIT)
MMAE 202	3 (IIT)
MMAE 313	3 (IIT)
MMAE 320	3 (IIT)
ENGR 264	3 (BenU)
HUMN 240	3 (BenU) (Note 1)
	<b>18</b>

## Seventh Semester

MMAE 311	3 (IIT)
MMAE 312	3 (IIT)
MMAE 315	4 (IIT)
MMAE 350	3 (IIT)
HUMN 250	3 (BenU) (Note 1)
	<b>16</b>

## Eighth Semester

MMAE 304	3 (IIT)
MMAE372	3 (IIT)
MMAE 443	3 (IIT)
MMAE 450	3 (IIT)
MMAE 452	3 (IIT)
	<b>15</b>

## Ninth Semester

MMAE 410	3 (IIT)
MMAE 411	3 (IIT)
MMAE 412 or 414	3 (IIT) (Note 4)
IPRO 497	3 (IIT)
Physics or Chemistry elective (300+ Level)	3 (BenU)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>18</b>

## Tenth Semester

MMAE 413 or 416	3 (IIT) (Note 4)
MMAE 415	4 (IIT)
MMAE 417, 418 or 472	3 (IIT)
IPRO 497	3 (IIT)
Literature/Foreign Language	
Literature elective	3 (BenU) (Note 1)
	<b>16</b>

**Total**

**167 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. Choose a Life Science course at Benedictine University

Note 3. PHY 211, 212, 213, 205, 206 (BenU) = PHYS 123, 221, 224 (IIT).

Note 4. Student must choose either the MMAE 412 and 413 sequence or the MMAE 414 and 416.

Note 5. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 6. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU+IIT (Five-year Mechanical Engineering Program)

B.A. in Engineering Science at Benedictine/B.S. in Mechanical Engineering at IIT

## First Semester

MATH C210 and C207 5 (BenU) (MATH 151)  
 ENGR 120 2 (BenU)  
 CHEM C113 and C114 4 (BenU) (CHEM 124)  
 Religious Studies elective 3 (BenU) (Note 1)  
 WRIT S101 3 (BenU)  
**17**

## Second Semester

MATH C211 4 (BenU) (MATH 152)  
 WRIT S102 3 (BenU)  
 Life Sciences Elective 3 (BenU) (Note 2)  
 CHEM C123 and C124 4 (BenU)  
 Psychology/Sociology elective 3 (BenU) (Note 1)  
**17**

## Third Semester

PHYS C211 and C205 5 (BenU) (Note 3)  
 MATH C212 4 (BenU) (MATH 251)  
 CMSC C180 C181 4 (BenU) (MMAE 100)  
 SPCH S110 3 (BenU)  
**16**

## Fourth Semester

PHYS C212 and C206 5 (BenU) (Note 3)  
 MATH 260 4 (BenU) (MATH 252)  
 CMSC C200 4 (BenU) (CS 105)  
 HUMN 220 3 (BenU) (Note 1)  
**16**

## Fifth Semester

MMAE 232 3 (IIT)  
 PHYS WI213 3 (BenU) (Note 3)  
 ENGR 220 3 (BenU) (MMAE 201)  
 Philosophy elective 3 (BenU) (Note 3)  
 HUMN 230 3 (BenU) (Note 3)  
**15**

## Sixth Semester

MS 201 3 (IIT)  
 MMAE 202 3 (IIT)  
 MMAE 350 3 (IIT)  
 ENGR 264 3 (BenU)  
 HUMN 240 3 (BenU) (Note 1)  
 Business/Economics elective 3 (BenU) (Note 1)  
**18**

## Seventh Semester

MMAE 302 3 (IIT)  
 MMAE 305 3 (ITT)  
 MMAE 313 3 (IIT)  
 MMAE 320 3 (IIT)  
 Literature elective 3 (BenU) (Note 1)  
 HUMN 250 3 (BenU) (Note 1)  
**18**

## Eighth Semester

MMAE 319 4 (IIT)  
 MMAE 321 3 (IIT)  
 MMAE 323 3 (IIT)  
 MMAE 332 3 (IIT)  
 Anthropology/Political Science elective 3 (BenU) (Note 1)  
**16**

## Ninth Semester

MMAE 419 4 (IIT)  
 MMAE 443 3 (IIT)  
 MMAE 445 3 (IIT)  
 MMAE 485 3 (IIT)  
 IPRO 497 3 (IIT)  
**16**

## Tenth Semester

MMAE 432 3 (IIT)  
 MMAE 443 3 (IIT)  
 IPRO 497 3 (IIT)  
 PHYS or CHEM Elective (300+ level) 3 (BenU)  
 Fine Arts/Music elective 3 (BenU) (Note 1)  
**15**

**TOTAL HOURS**

**164 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. Choose a Life Sciences course at Benedictine University.

Note 3. PHYS 211, 212, 213, 205, 206 (BenU) = PHYS 123, 211, 224 (IIT).

Note 4. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 5. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU+IIT (Five-year Electrical Engineering Program)

B.A. in Engineering Science at Benedictine/B.S. in Electrical Engineering at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT S101	3 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 122)
SPCH 110	3 (BenU)
	<b>15</b>

## Third Semester

PHYS C211 and C205	5 (BenU) (Note 3)
MATH C212	4 (BenU) (MATH 251)
HUMN 220	3 (BenU) (Note 1)
CMSC C180 and 181	4 (BenU) (ECE 100)
ENGR 120	2 (BenU)
	<b>18</b>

## Fifth Semester (Note 5)

ECE 211	4 (IIT)
ECE 218	3 (IIT)
CMSC 220	4 (BenU) (ECE 242)
ENGR 220	3 (BenU)
PHYS WI213	3 (BenU) (Note 3)
	<b>17</b>

## Seventh Semester (Note 5)

MATH 333	3 (ITT)
ECE 307	4 (IIT)
ECE 311	4 (IIT)
IPRO 497	3 (IIT) (Note 4)
HUMN 240	3 (BenU) (Note 1)
	<b>17</b>

## Ninth Semester (Note 5)

Prof ECE elective	4 (IIT) (Note 5)
Prof ECE elective	3 (IIT) (Note 5)
IPRO 497	3 (IIT) (Note 4)
PHYS or CHEM elective (300+ level)	3 (BenU)
HUMN 250	3 (BenU) (Note 1)
	<b>16</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
WRIT S102	3 (BenU)
CHEM C123 and C124	4 (BenU) (Science elective)
Philosophy elective	3 (BenU) (Note 1)
Life Sciences elective	3 (BenU) (Note 2)
	<b>17</b>

## Fourth Semester

PHYS C212 and C206	5 (BenU) (Note 3)
MATH 260	4 (BenU) (MATH 252)
Business/Economics elective	3 (BenU) (Note 1)
CMSC C200	4 (BenU) (CS 115 and 116)
	<b>16</b>

## Sixth Semester (Note 5)

ECE 213	4 (IIT)
ENGR 264	3 (BenU)
HUMN 230	3 (BenU) (Note 1)
Psychology/Sociology elective	3 (BenU) (Note 1)
Religious Studies/ Theology elective	3 (BenU) (Note 1)
	<b>16</b>

## Eighth Semester (Note 5)

ECE 308	3 (IIT)
ECE 312	4 (IIT)
ECE 319	4 (IIT)
MATH 371	3 (BenU) (MATH 474)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>17</b>

## Tenth Semester (Note 5)

Prof ECE elective	4 (IIT) (Note 5)
Prof ECE elective	3 (IIT) (Note 5)
Prof ECE elective	3 (IIT) (Note 5)
Literature elective	3 (BenU) (Note 1)
Fine Arts/Music elective	3 (BenU) (Note 1)
	<b>16</b>

**TOTAL**

**165 minimum**

- Note 1. Choose Humanities and Social Sciences electives from approved courses.
- Note 2. Choose a Life Sciences course at Benedictine University.
- Note 3. PHYS C211, C205, C212, C206, 213 (BenU) = PHYS 123, 221, 224 (IIT).
- Note 4. Interprofessional projects may be taken at any time during the third, fourth or fifth years (course scheduling must be adjusted accordingly with adviser approval). IPROs are subject to the approval of your academic advisor. At least one IPRO should have a significant technical content (at least 75 percent) and be viewed as a technical IPRO with the same definition as a technical elective.

- Note 5. Professional ECE electives may be chosen from any of the 400-level ECE courses identified with (P) in the course descriptions. Courses at the 500-level may be taken with the written consent of the instructor, faculty advisor and the ECE department chair. At least two of the electives must contain laboratories. See the current IIT bulletin for more information. A maximum of three credits of ECE 491 or ECE 497 may be used as a professional elective with advisor approval.
- Note 6. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.
- Note 7. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU+IIT (Five-year Civil Engineering Program)

B.A. in Engineering Science at Benedictine/B.S. in Civil Engineering at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT S101	3 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 124)
Religious Studies elective	3 (BenU) (Note 1)
SPCH S110	3 (BenU)
	<b>18</b>

## Third Semester

PHYS C211 and C205	5 (BenU) (Note 3)
MATH C212	4 (BenU) (MATH 251)
CMSC C180 and C181	4 (BenU) (CAE 101)
ENGR 120	2 (BenU) CAE
100Business/Economics elective	3 (BenU) (Note 1)
	<b>18</b>

## Fifth Semester

CAE 105	3 (IIT)
CAE 221	3 (IIT)
PHYS WI213	3 (BenU) (Note 3)
ENGR 220	3 (BenU) (MMAE 201)
HUMN 230	3 (BenU) (Note 3)
	<b>15</b>

## Seventh Semester

CAE 301	3 (IIT)
CAE 303	3 (IIT)
CAE 304	3 (IIT)
CAE 312	3 (IIT)
CAE 315	3 (IIT)
PHYS or CHEM Elective (300+ level)	3 (BenU)
	<b>18</b>

## Ninth Semester

CAE 419	3 (IIT)
CAE 431	3 (IIT)
CAE 457	3 (IIT)
CAE 470	3 (IIT)
CAE Elective (400+ level)	3 (IIT) (Note 4)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>18</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
WRIT S102	3 (BenU)
CHEM C123 and C124	4 (BenU)
Life Sciences elective	3 (BenU) (Note 2)
Psychology/Sociology elective	3 (BenU) (Note 1)
	<b>17</b>

## Fourth Semester

MATH 260	4 (BenU) (MATH 252)
PHYS C212 and C206	5 (BenU) (Note 3)
HUMN 220	3 (BenU) (Note 1)
CMSC C200	4 (BenU) (CS 105)
	<b>16</b>

## Sixth Semester

MMAE 202	3 (IIT)
MMAE 305	3 (IIT)
HUMN 240	3 (BenU) (Note 1)
ENGR 264	3 (BenU)
Philosophy elective	3 (BenU) (Note 1)
Fine Arts/Music elective	3 (BenU) (Note 1)
	<b>18</b>

## Eighth Semester

CAE 302	3 (IIT)
CAE 307	3 (IIT)
CAE 310	3 (IIT)
CAE 323	3 (IIT)
IPRO 497	3 (IIT)
HUMN 250	3 (BenU)
	<b>18</b>

## Tenth Semester

CAE Elective (400+ level)	3 (IIT) (Note 4)
CAE 432	3 (IIT)
IPRO capstone design course	3 (IIT)
Literature elective	3 (BenU)
Technical elective	3 (IIT) (Note 4)
	<b>15</b>

## TOTAL

**171 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. Choose a Life Sciences courses at Benedictine University.

Note 3. PHYS 211, 212, 213, 205, 206 (BenU) = PHYS 123, 211, 224 (IIT).

Note 4. Technical elective must be a 300+ level Science or Engineering elective.

Note 5. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 6. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU+IIT (Five-year Architectural Engineering Program)

B.A. in Engineering Science at Benedictine/B.S. in Architectural Engineering at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT S101	3 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 124)
Religious elective	3 (BenU) (NOTE 1)
SPCH S110	3 (BenU)
	<b>18</b>

## Third Semester

PHYS C211 and C205	5 (BenU) (Note 3)
MATH C212	4 (BenU) (MATH 251)
CMSC C180 and C181	4 (BenU) (CAE 101)
ENGR 120	2 (BenU) (CAE 100)
Business/Economics elective	3 (BenU) (Note 1)
	<b>18</b>

## Fifth Semester

CAE 105	3 (IIT)
CAE 208	3 (IIT)
AAH 119	3 (IIT)
PHYS WI213	3 (BenU) (Note 3)
ENGR 220	3 (BenU) (MMAE 200)
HUMN 230	3 (BenU) (Note 1)
	<b>18</b>

## Seventh Semester

CAE 303	3 (IIT)
CAE 304	3 (IIT)
CAE 312	3 (IIT)
CAE 315	3 (IIT)
CAE 331	3 (IIT)
Physics or Chemistry elective (300+ level)	3 (BenU)
	<b>18</b>

## Ninth Semester

CAE 464	3 (IIT)
CAE 468	2 (IIT)
CAE 470	3 (IIT)
Technical elective	3 (IIT) (Note 4)
Technical elective	3 (BenU) (Note 4)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>17</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
WRIT S102	3 (BenU)
CHEM C123 and C124	4 (BenU)
Psychology/Sociology elective	3 (BenU) (Note 1)
Life Sciences elective	3 (BenU) (Note 2)
	<b>17</b>

## Fourth Semester

MATH 260	4 (BenU) (MATH 252)
PHYS C212 and C206	5 (BenU) (Note 3)
HUMN 220	3 (BenU) (Note 1)
CMSC C200	4 (BenU) (CS 105)
	<b>16</b>

## Sixth Semester

MMAE 202	3 (IIT)
CAE 209	4 (IIT)
ENGR 264	3 (BenU) (CAE 110)
HUMN 240	3 (BenU) (Note 1)
Philosophy elective	3 (BenU) (Note 1)
	<b>16</b>

## Eighth Semester

CAE 307	3 (IIT)
CAE 323	3 (IIT)
CAE 334	3 (IIT)
CAE 461	3 (IIT)
I PRO 497	3 (IIT)
HUMN 250	3 (BenU) (Note 1)
	<b>18</b>

## Tenth Semester

CAE 469	2 (IIT)
CAE 471	3 (IIT)
Technical elective	3 (IIT) (Note 4)
I PRO Capstone Design Course	3 (IIT)
Literature/Foreign Language elective	3 (BenU) (Note 1)
Fine Arts/Music elective	3 (BenU) (Note 1)
	<b>17</b>

## TOTAL HOURS

**173 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. Choose a Life Sciences course at Benedictine University.

Note 3. PHYS 211, 212, 213, 205, 206 (BenU) = PHYS 123, 211, 224 (IIT).

Note 4. Technical elective must be a 300+ level Science or Engineering elective.

Note 5. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 6. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU+IIT (Five-year Chemical Engineering Program)

B.A. in Engineering Science at Benedictine/B.S. in Chemical Engineering at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT S101	3 (BenU)
CHEM C113 and C114	4 (BenU)
Religious Studies/Theology Elective	3 (BenU) (Note 1)
ENGR 120	2 (BenU)
	<b>17</b>

## Third Semester

PHYS C211 and C205	5 (BenU) (Note 3)
MATH C212	4 (BenU) (MATH 251)
CMSC C180 and C181	4 (BenU) (CHE 100)
CHEM 242 and 243	4 (BenU) (CHEM 237)
	<b>17</b>

## Fifth Semester

ChE 202	3 (IIT)
CHEM 313	3 (BenU) (CHEM 343)
PHYS WI213	3 (BenU) (Note 3)
ENGR 220	3 (BenU) (CHE 101)
HUMN 220	3 (BenU) (Note 1)
Philosophy elective	3 (BenU) (Note 1)
	<b>18</b>

## Seventh Semester

ChE 302	3 (IIT)
ChE 311	3 (IIT)
ChE 351	3 (IIT)
ECE 215 or 218	3 (IIT)
Fine Arts/Music elective	3 (BenU) (Note 1)
Literature/Foreign Language Elective	3 (BenU) (Note 1)
	<b>18</b>

## Ninth Semester

ChE 418	2 (IIT)
ChE 423	3 (IIT)
ChE 435	3 (IIT)
ChE 494	3 (IIT)
Psychology/Sociology elective	3 (BenU) (Note 1)
HUMN 250	3 (BenU) (Note 1)
	<b>17</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
Life Sciences elective	3 (BenU) (Note 2)
CHEM C123 and C124	4 (BenU) (CHEM 125)
WRIT S102	3 (BenU)
SPCH S110	3 (BenU)
	<b>17</b>

## Fourth Semester

MATH 260	4 (BenU) (MATH 252)
PHYS C212 and C206	5 (BenU) (Note 3)
CMSC C200	4 (BenU) (CS 105)
CHEM 247 (BenU)	3 (BenU) (CHEM 239)
	<b>16</b>

## Sixth Semester

ChE 301	3 (IIT)
ChE/IPRO 296	1 (IIT)
ENGR 264	3 (BenU) (Technical elective)
CHEM 315 and 316	4 (BenU) (CHEM 344)
HUMN 230	3 (BenU) (Note 1)
Business/Economics elective	3 (BenU) (Note 1)
	<b>17</b>

## Eighth Semester

ChE 317	2 (IIT)
ChE 433	3 (IIT)
IPRO 497	3 (IIT)
ChE 451	2 (IIT)
Technical elective	3 (IIT)
HUMN 240	3 (BenU) (Note 2)
	<b>16</b>

## Tenth Semester

ChE 406	3 (IIT)
ChE 439	3 (IIT)
IPRO 496	2 (IIT)
Technical elective	3 (IIT)
Technical elective	3 (BenU) (Note 4)
Anthropology/Political Science elective	3 (BenU) (Note 3)
	<b>17</b>

## Total Hours

**170 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. Choose a Life Sciences course at Benedictine University.

Note 3. PHYS 211, 212, 213, 205, 206 (BenU) = PHYS 123, 211, 224 (IIT).

Note 4. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 5. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU+IIT (Five-year Computer Engineering Program)

B.A. in Engineering Science at Benedictine/B.S. in Computer Engineering at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
SPCH 110	3 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 124)
Psychology/Sociology elective	3 (BenU) (Note 1)
WRIT S101	3 (BenU)
	<b>18</b>

## Third Semester

PHYS C211 and C205	5 (BenU) (Note 3)
MATH C212	4 (BenU) (MATH 251)
ENGR 120	2 (BenU)
CMSC C180 and C181	4 (BenU) (ECE 100)
HUMN 220	3 (BenU) (Note 1)
	<b>18</b>

## Fifth Semester

ECE 211	4 (IIT)
ECE 218	3 (IIT)
ENGR 220	3 (BenU) (MMAE 200)
CMSC 205	3 (BenU) (CS 331)
PHYS WI213	3 (BenU) (Note 3)
	<b>16</b>

## Seventh Semester

ECE 311	4 (IIT)
CS 351	3 (IIT)
MATH 333 or 350	3 (IIT)
CMSC 220	3 (BenU) (ECE 242)
HUMN 240	3 (BenU) (Note 3)
	<b>16</b>

## Ninth Semester

ECE 441	4 (IIT)
CS 487	3 (IIT)
ECE 485	3 (IIT) (Note 5)
Professional ECE elective	3/4 (IIT) (Note 6)
PHYS or CHEM elective (300+ Level)	3 (BenU)
	<b>16/17</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
WRIT S102	3 (BenU)
CHEM C123 and C124	4 (BenU) (ECE Elective)
Life Sciences elective	3 (BenU) (Note 2)
Philosophy elective	3 (BenU) (Note 1)
	<b>17</b>

## Fourth Semester

MATH 240	4 (BenU) (CS 330)
MATH 260	4 (BenU) (MATH 252)
PHYS C212 and C206	5 (BenU) (Note 3)
CMSC C200	4 (BenU) (CS 115 and 116)
	<b>17</b>

## Sixth Semester

ECE 213	4 (IIT)
ENGR 264	3 (BenU)
Business/Economics elective	3 (BenU) (Note 1)
HUMN 230	3 (BenU) (Note 1)
Religious Studies/Theology elective	3 (BenU) (Note 1)
	<b>16</b>

## Eighth Semester

IIPRO 497	3 (IIT) (Note 4)
MATH 371	3 (BenU) (MATH 474)
CS 450	3 (IIT)
ECE 307, 308, 312, or 319	3/4 (IIT) (Note 7)
Fine Arts/Music elective	3 (BenU) (Note 1)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>18/19</b>

## Tenth Semester

Professional ECE elective	3/4 (IIT) (Note 6)
ECE 429 or 446	3/4 (IIT)
IIPRO 497	3 (IIT) (Note 4)
HUMN 250	3 (BenU) (Note 1)
Literature/Foreign elective	3 (BenU) (Note 1)
	<b>15/17</b>

**Total Hours**

**167 minimum**

Note 1. Choose Humanities and Social Science electives from approved courses.

Note 2. Choose a Life Science course at Benedictine University.

Note 3. PHYS C211, C212, C205, C206, 213 (BenU) = PHYS 123, 221, 224 (IIT).

Note 4. Interprofessional Projects may be taken at any time during the third, fourth or fifth years (course scheduling must be adjusted accordingly with advisor approval).

Note 5. CS 470 may be substituted with advisor approval.

Note 6. Professional electives may be chosen from any of the 400-level IIT ECE courses identified with a (P) in the course description and any 400 level IIT computer science courses except for CS 485. A maximum of three credits of ECE 491 - Undergraduate Research or ECE 497 - Special Programs may be used as a professional electives with advisor approval.

Note 7. If a 4 hour course is completed, 19 hours will be required for the term. The student must receive permission from his or her academic dean to complete 19 semester hours in the term.

Note 8. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 9. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU + IIT (Five-year Biomedical Engineering – Cell and Tissue Track)  
 B.A. in Engineering Science at Benedictine/  
 B.S. in Biomedical Engineering – Cell and Tissue Track at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT S101	3 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 124)
SPCH S110	3 (BenU)
Psychology/Sociology elective	3 (BenU) (Note 1)
	<b>18</b>

## Third Semester

MATH C212	4 (BenU) (MATH 251)
PHYS C211 and C205	5 (BenU) (Note 3)
CMSC C180 and C181	4 (BenU) (BME 100)
ENGR 120	2 (BenU)
HUMN 220	3 (BenU) (Note 1)
	<b>18</b>

## Fifth Semester

ECE 215	3 (IIT)
CHEM 242 and 243	4 (BenU) (CHEM 237)
ENGR 220	3 (BenU) (MMAE 200)
PHYS 213	3 (BenU) (Note 3)
HUMN 230	3 (BenU) (Note 1)
	<b>16</b>

## Seventh Semester

BME 315	2 (IIT)
BME 330	3 (IIT)
CHE 202	3 (IIT)
ENVE 426	3 (IIT)
I PRO 497	3 (IIT)
Business/Economics elective	3 (BenU) (Note 1)
	<b>17</b>

## Ninth Semester

BIOL 430	3 (IIT) (Note 2)
BME 405	2 (IIT)
BME 418	3 (IIT)
BME 419	2 (IIT)
BME 482	3 (IIT)
PHYS/CHEM Elective (300+ level)	3 (BenU)
	<b>16</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
CHEM C123 and C124	4 (BenU)
WRIT S102	3 (BenU)
Philosophy elective	3 (BenU) (Note 1)
Literature elective	3 (BenU) (Note 1)
	<b>17</b>

## Fourth Semester

MATH 260	4 (BenU) (MATH 252)
CMSC C200	4 (BenU) (CS115 and 116)
PHYS C212 and C206	5 (BenU) (Note 3)
Religious Studies Elective	3 (BenU) (Note 1)
	<b>16</b>

## Sixth Semester

BIOL 115	3 (IIT) (Note 2)
BIOL 117	1 (IIT) (Note 2)
BME 200	1 (IIT)
MS 201	3 (IIT)
CHEM 247	3 (BenU) (CHEM 239)
ENGR 264	3 (BenU)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>17</b>

## Eighth Semester

BME 301	3 (IIT)
BME 310	3 (IIT)
BME 320	1 (IIT)
BME 335	3 (IIT)
BME Elective	3 (IIT)
HUMN 240	3 (BenU) (Note 1)
	<b>16</b>

## Tenth Semester

BME 420	3 (IIT)
BME 490	1 (IIT)
I PRO 497	3 (IIT)
BME Elective	3 (IIT) (Note 4)
HUMN 250	3 (BenU) (Note 1)
Fine Arts/Music elective	3 (BenU) (Note 1)
	<b>16</b>

**Total Hours**

**167 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. BIOL 115, 117, and 430 will substitute for the Life Science component of the Benedictine University Natural Science Requirement.

Note 3. PHYS 211, 212, 213, 205, 206 (BenU) = PHYS 123, 211, 224 (IIT).

Note 4. BME elective must be a 300+ level engineering course in BME, CAE, CHE, CEC, ENVE or MMAE.

Note 5. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 6. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU + IIT (Five-year Biomedical Engineering – Medical Imaging)  
 B.A. in Engineering Science at Benedictine/  
 B.S. in Biomedical Engineering – Medical Imaging at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT S101	3 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 124)
SPCH S110	3 (BenU)
Psychology/Sociology elective	3 (BenU) (Note 1)
	<b>18</b>

## Third Semester

MATH C212	4 (BenU) (MATH 251)
PHYS C211 and C205	5 (BenU) (Note 3)
CMSC C180 and C181	4 (BenU) (BME 100)
ENGR 120	2 (BenU)
HUMN 220	3 (BenU) (Note 1)
	<b>18</b>

## Fifth Semester

ECE 215	3 (IIT)
MATH 333	3 (IIT)
ENGR 220	3 (BenU) (MMAE 200)
PHYS WI213	3 (BenU) (Note 3)
Religious Studies elective	3 (BenU) (Note 1)
	<b>15</b>

## Seventh Semester

BME 309	3 (IIT)
BME 315	2 (IIT)
BME 330	3 (IIT)
ENVE 426	3 (IIT)
IPRO 497	3 (IIT)
Business/Economics elective	3 (BenU) (Note 1)
	<b>17</b>

## Ninth Semester

BIOL 430	3 (IIT) (Note 2)
BME 405	2 (IIT)
BME 419	2 (IIT)
IPRO 497	3 (IIT)
ECE 437	3 (IIT)
BME elective	3 (IIT) (Note 4)
	<b>16</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
CHEM C123 and C124	4 (BenU)
WRIT S102	3 (BenU)
Philosophy elective	3 (BenU) (Note 1)
Literature elective	3 (BenU) (Note 1)
	<b>17</b>

## Fourth Semester

BIOL 115	3 (IIT) (Note 2)
BIOL 117	1 (IIT) (Note 2)
CMSC C200	4 (BenU) (CS115 and 116)
MATH 260	4 (BenU) (MATH 252)
PHYS C212 and C206	5 (BenU) (Note 3)
	<b>17</b>

## Sixth Semester

BME 200	1 (IIT)
ECE 216	3 (IIT)
PHYS/CHEM elective (300+ level)	3 (BenU)
ENGR 264	3 (BenU)
HUMN 230	3 (BenU)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>16</b>

## Eighth Semester

BME 310	3 (IIT)
BME 320	1 (IIT)
BME 443	3 (IIT)
BME 445	3 (IIT)
BME elective	3 (IIT)
HUMN 240	3 (BenU) (Note 1)
	<b>16</b>

## Tenth Semester

BME 420	3 (IIT)
BME 438	3 (IIT)
BME 490	1 (IIT)
ECE 481	3 (IIT)
HUMN 250	3 (BenU) (Note 1)
Fine Arts/Music elective	3 (BenU) (Note 1)
	<b>16</b>

**Total Hours**

**166 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. BIOL 115, 117 and 430 will substitute for the Life Science component of the Benedictine University Natural Science requirement.

Note 3. PHYS 211, 212, 213, 205, 206 (BenU) = PHYS 123, 211, 224 (IIT).

Note 4. BME elective must be a 300+ level engineering course in BME, CAE, CHE, ELE, ENVE or MMAE.

Note 5. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 6. A minimum of 45 semester hours must be completed at IIT.

# Recommended Program

BenU + IIT (Five-year Biomedical Engineering – Neural Engineering)  
 B.A. in Engineering Science at Benedictine/  
 B.S. in Biomedical Engineering – Neural Engineering at IIT

## First Semester

MATH C210 and C207	5 (BenU) (MATH 151)
WRIT S101	3 (BenU)
CHEM C113 and C114	4 (BenU) (CHEM 124)
SPCH S110	3 (BenU)
Psychology/Sociology elective	3 (BenU) (Note 1)
	<b>18</b>

## Third Semester

MATH C212	4 (BenU) (MATH 251)
PHYS C211 and C205	5 (BenU) (Note 3)
CMSC C180 and C181	4 (BenU) (BME 100)
ENGR 120	2 (BenU)
HUMN 220	3 (BenU) (Note 1)
	<b>18</b>

## Fifth Semester

ECE 211	4 (IIT)
ECE 218	3 (IIT)
MATH 333	4 (IIT) OR
CHEM 242 and 243	4 (BenU) (CHEM 237)
ENGR 220	3 (BenU) (MMAE 200)
PHYS WI213	3 (BenU) (Note 3)
	<b>17</b>

## Seventh Semester

BME 309	3 (IIT)
BME 315	2 (IIT)
BME 330	3 (IIT)
ENVE 426	3 (IIT)
IPRO 497	3 (IIT)
Business/Economics elective	3 (BenU) (Note 1)
	<b>17</b>

## Ninth Semester

BIOL 430	3 (IIT) (Note 2)
BME 405	2 (IIT)
BME 419	2 (IIT)
IPRO 497	3 (IIT)
BME elective	3 (IIT) (Note 5)
PHYS/CHEM elective (300+ level)	3
	<b>16</b>

## Second Semester

MATH C211	4 (BenU) (MATH 152)
CHEM C123 and C124	4 (BenU)
WRIT S102	3 (BenU)
Philosophy elective	3 (BenU) (Note 1)
Literature elective	3 (BenU) (Note 1)
	<b>17</b>

## Fourth Semester

BIOL 115	3 (IIT) (Note 2)
BIOL 117	1 (IIT) (Note 2)
CS 115	2 (IIT) (Note 4)
MATH 260	4 (BenU) (MATH 252)
PHYS C212 and C206	5 (BenU) (Note 3)
Religious Studies elective	3 (BenU) (Note 1)
	<b>18</b>

## Sixth Semester

BME 200	1 (IIT)
ECE 213	4 (IIT)
CHEM 247	3 (BenU) (CHEM 239) OR
Technical elective	3 (IIT)
ENGR 264	3 (BenU)
HUMN 230	3 (BenU)
Anthropology/Political Science elective	3 (BenU) (Note 1)
	<b>17</b>

## Eighth Semester

BME 310	3 (IIT)
BME 320	1 (IIT)
BME 443	3 (IIT)
BME 445	3 (IIT)
BME elective	3 (IIT)
HUMN 240	3 (BenU) (Note 1)
	<b>16</b>

## Tenth Semester

BME 420	3 (IIT)
BME 438	3 (IIT)
BME 490	1 (IIT)
BME Elective	3 (IIT) (Note 5)
HUMN 250	3 (BenU) (Note 1)
Fine Arts/Music elective	3 (BenU) (Note 1)
	<b>16</b>

## Total Hours

**170 minimum**

Note 1. Choose Humanities and Social Sciences electives from approved courses.

Note 2. BIOL 115, 117 and 430 will substitute for the Life Science component of the Benedictine University Natural Science requirement.

Note 3. PHYS 211, 212, 213, 205, 206 (BenU) = PHYS 123, 211, 224 (IIT).

Note 4. If you complete BenU CMSC 200, please consult your academic advisor at Benedictine University regarding the completion of approved Humanities in Social Science courses in a summer term to reduce your academic load in the fourth semester of the joint program.

Note 5. BME elective must be a 300+ level engineering course in BME, CAE, CHE, ELE ENVE or MMAE

Note 6. Consult your academic advisor at Benedictine University regarding the completion of approved courses in a summer term to reduce your academic load in the fall or spring term.

Note 7. A minimum of 45 semester hours must be completed at IIT.