B.S.in Engineering Technology

(120 credits minimum)

Concentration in Applied Engineering Technology

First Year

1st Semester		**Credits**
MATH 138	General Calculus I	3
Computing Literacy GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/computer-science-ger/)		3
Scientific Literacy GER with Lab (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/natural-science-ger/)		4
ENGL 101	English Composition: Introduction to Academic Writing	3
MET 103 or FED 101	Engineering Graphics and Intro. to CAD or Fundamentals of Engineering Design	2
ET 101	Introduction to Engineering Technology	0
FYS SEM	First-Year Student Seminar	0
	Term Credits	**15**
2nd Semester		
MATH 105	Elementary Probability and Statistics	3
ENGL 102	English Composition: Introduction to Writing for Research	3
Scientific Literacy GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/natural-science-ger/)		3
Social Science Literacy GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
Free Elective (100-200 level)		3
	Term Credits	**15**

Second Year

1st Semester		
Applied Engineering Technology Elective with Lab (200 level)		3
Applied Engineering Technology Elective with Lab (200 level)		3
Technical Elective (100-200 level)		3
Applied Engineering Technology Elective (200 level)		3
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
	Term Credits	**15**
2nd Semester		
Applied Engineering Technology Elective with Lab (200 level)		3
Applied Engineering Technology Elective (200 level)		3
Technical Elective (100-200 level)		3
Applied Engineering Technology Elective (200 level)		3
Free Elective (100-200 level)		3
	Term Credits	**15**

Third Year

1st Semester		
Applied Engineering Technology Elective with Lab (300 level)		3
Applied Engineering Technology Elective with Lab (300 level)		3
Technical Elective (300 level)		3
Applied Engineering Technology Elective (300 level)		3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**15**

2nd Semester		
Applied Engineering Technology Elective with Lab (300 level)		3
Applied Engineering Technology Elective (300 level)		3
Free Elective (300-400 level)		3
Technical Elective (300 level)		3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**15**
Fourth Year		
1st Semester		
Applied Engineering Technology Elective with Lab (400 level)		3
Applied Engineering Technology Elective with Lab (400 level)		3
Applied Engineering Technology Elective (400 level)		3
Applied Engineering Technology Elective (400 level)		3
Technical Elective (400 level)		3
	Term Credits	**15**
2nd Semester		
ET 450	Multidisciplinary Capstone Project	3
Applied Engineering Technology Elective with Lab (400 level)		3
Free Elective (300-400 level)		3
Applied Engineering Technology Elective (400 level)		3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
	Term Credits	**15**
	Total Credits	**120**

Concentration in Biomedical Engineering Technology

(120 credits minimum)

First Year		
1st Semester		**Credits**
MATH 138	General Calculus I	3
PHYS 102	General Physics I	3
PHYS 102A	General Physics I Lab	1
CHEM 121	Fundamentals of Chemical Principles I	3
CHEM 125A	General Chemistry Lab I	1
MET 103	Engineering Graphics and Intro. to CAD	2
ENGL 101	English Composition: Introduction to Academic Writing	3
ET 101	Introduction to Engineering Technology	0
FYS SEM	First-Year Student Seminar	0
	Term Credits	**16**
2nd Semester		
MATH 238	General Calculus II	3
PHYS 103	General Physics II	3
PHYS 103A	General Physics II Lab	1
CHEM 122	Fundamentals of Chemical Principles II	3
CHEM 126A	Gen Chemistry Lab II	1
MET 105	Applied Computer Aided Design	2
ENGL 102	English Composition: Introduction to Writing for Research	3
	Term Credits	**16**

Second Year		
1st Semester		
ECET 201	Circuits I	3
BME 111	Introduction to Physiology	3
ENGR 211	Professional Skills for Engineers I	1
Humanities and History GER 200 Level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
Technical Elective 1		3
Free Elective 1		3
	Term Credits	**16**
2nd Semester		
ECON 201 or EPS 202	Economics or Society, Technology, and the Environment	3
BME 210	Processing Fund for Biol Signa	3
MNET 215	Materials and Processes for Technology	3
Technical Elective 2		3
Free Elective 2		3
	Term Credits	**15**
Third Year		
1st Semester		
COM 313	Technical Writing	3
ECET 329	Analog and Digital Electronics	3
MET 303	Applied Thermodynamics	3
Technical Elective 3		3
Free Elective 3		3
	Term Credits	**15**
2nd Semester		
BMET 320	Applied Biomedical Data Acquisition	3
MET 304	Applied Fluid Mechanics	3
MNET 315	Industrial Statistics	3
Technical Elective 4		3
History and Humanities GER 300+ Level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**15**
Fourth Year		
1st Semester		
MNET 416	Production Scheduling	3
BMET 415	Biomedical Mechatronics	3
BMET 440	Biomedical Experiential Learning	3
MNET 414	Industrial Cost Analysis	3
MET 403	Applied Thermodynamics II	3
	Term Credits	**15**
2nd Semester		
BMET 450	BMET Senior Project	3
MNET 420	Quality Systems	3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
Technical Elective 5		3
	Term Credits	**12**
	Total Credits	**120**

GER Electives

Refer to the **General Education Requirement** section of this catalog for further information on GER electives.

Technical Electives

Code	Title	Credits
BME 303	Biological and Chemical Foundations of Biomedical Engineering	3
BME 333	Biomedical Signals and Systems	3
BME 372	Electronics of Medical Devices	3
BME 386	Biosensor and Data Acquisition Lab	3
BME 471	Principles of Medical Imaging	3
BME 489	Medical Instrumentation	3
ECET 210	Intro. to Microprocessors and Computer Architecture	3
ECET 303	Circuit Measurements	2
IE 473	Safety Engineering	3
MATH 309	Mathematical Analysis for Technology	4
MET 205	Advanced Computer Aided Design	3
MET 235	Statics for Technology	3
MET 237	Strength of Materials for Technology	3
MIT 326	Electronic Medical Record Design	3
MIT 360	Introduction to Gerontology	3
MIT 362	Geriatric Engineering I	3
MIT 460	Economics of Aging: Microeconomics(individual) and Macroeconomic(global) Challenges	3
MNET 300	Concepts In Machining	3
SDET 325	Medical Informatics Technology	3
SDET 330	Software Web Applications for Engineering Technology I	3
SDET 341	Visual Basic.NET for Engineering Technology	3
SDET 373	Web App Development for Mobile	3
SDET 425	Medical Informatics Technology II	3
SDET 430	Software Web Applications for Engineering Technology II	3

Concentration in Construction Management Technology

(120 credits minimum)

First Year		
1st Semester		**Credits**
CS 106	Introduction to Computing	3
MATH 138	General Calculus I	3
PHYS 102	General Physics I	3
PHYS 102A	General Physics I Lab	1
ENGL 101	English Composition: Introduction to Academic Writing	3
MET 103	Engineering Graphics and Intro. to CAD	2
ET 101	Introduction to Engineering Technology	0
FYS SEM	First-Year Student Seminar	0
	Term Credits	**15**
2nd Semester		
MATH 105	Elementary Probability and Statistics	3
PHYS 103	General Physics II	3
PHYS 103A	General Physics II Lab	1
ENGL 102	English Composition: Introduction to Writing for Research	3
MET 105	Applied Computer Aided Design	2
ECON 201	Economics	3
	Term Credits	**15**

Second Year		
1st Semester		
ACCT 115	Fundamentals of Financial Accounting	3
MGMT 290	Business Law I	3
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
SET 200	Introduction To Geomatics	2
SET 200A	Introduction to Geomatics Lab	1
	Term Credits	**12**
2nd Semester		
MIS 245	Introduction to Management Information Systems	3
Free Elective		3
CIM 205	Concrete Properties & Testing	3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
Technical or Management Elective		3
	Term Credits	**15**
Third Year		
1st Semester		
CET 313	Construction Procedures I	3
FIN 315	Fundamentals of Corporate Finance	3
CET 317	Construction Computing	3
CET 322	Construction Codes and Regulations	3
Free Elective		3
	Term Credits	**15**
2nd Semester		
CET 314	Construction Procedures II	3
CMT 332	Structural Systems for Construction Management	3
HRM 301	Organizational Behavior	3
CET 423	Construction Safety	3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
	Term Credits	**15**
Fourth Year		
1st Semester		
CET 411	Cost Estimating	3
CET 415	Construction Project Management	3
MNET 414	Industrial Cost Analysis	3
CMT 452	Mechanical and Electrical Systems for Construction	3
CET 421	Construction Contracts	3
Technical or Management Elective		3
	Term Credits	**18**
2nd Semester		
CET 413	Environmental Science	3
CMT 436	Temporary Structures for Construction Management	3
CET 416	Senior Construction Project	3
MGMT 390	Principles of Business	3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
	Term Credits	**15**
	Total Credits	**120**

Concentration in Software and Data Engineering Technology

(120 credits minimum)

First Year		
1st Semester		**Credits**
SDET 101 or CS 106	Fundamentals of Software and Data Technologies or Introduction to Computing	3
ENGL 101	English Composition: Introduction to Academic Writing	3
FYS SEM	First-Year Student Seminar	0
MATH 138	General Calculus I	3
ET 101	Introduction to Engineering Technology	0
MET 103	Engineering Graphics and Intro. to CAD	2
Social Science Literacy GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
	Term Credits	**14**
2nd Semester		
SDET 102	Applications of Software Engineering Technology	3
Scientific Literacy GER with Lab (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/natural-science-ger/)		4
CS 115	Introduction to Computer Science I in C++	3
ENGL 102	English Composition: Introduction to Writing for Research	3
MATH 105	Elementary Probability and Statistics	3
	Term Credits	**16**
Second Year		
1st Semester		
ECET 215	Introduction to Digital Electronics	3
History and Humanities GER 200 level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-200-level/)		3
IT 201	Information Design Techniques	3
Scientific Literacy GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/natural-science-ger/)		3
Technical Elective		3
Free Elective		3
	Term Credits	**18**
2nd Semester		
SDET 201	Data Engineering	3
IT 120	Introduction to Network Technology	3
IT 202	Internet Applications	3
Technical Elective		3
Free Elective		3
	Term Credits	**15**
Third Year		
1st Semester		
SDET 330	Software Web Applications for Engineering Technology I	3
COM 313	Technical Writing	3
IS 331	Database Design Management and Applications	3
ECET 311	Embedded Systems I	3
Technical Elective		3
Free Elective		3
	Term Credits	**18**
2nd Semester		
SDET 335	Networks Applications for Software and Data Engineering Technology I	3

History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
ECET 411	Embedded Systems II	3
Technical Elective		3
Free Elective		3
	Term Credits	**15**
Fourth Year		
1st Semester		
ENGR 423	Drone Science Fundamentals	3
SDET 430	Software Web Applications for Engineering Technology II	3
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
Technical Elective		3
	Term Credits	**12**
2nd Semester		
ENGR 424	Robotics Science Fundamentals	3
SDET 401	Senior Project	3
SDET 435	Networks Applications for Software and Data Engineering Technology II	3
Technical Elective		3
	Term Credits	**12**
	Total Credits	**120**

Approved Technical Electives

Code	Title	Credits
MIT 231	Intro to Comp Security:Med Dev	3
MIT 326	Electronic Medical Record Design	3
BMET 320	Applied Biomedical Data Acquisition	3
BMET 415	Biomedical Mechatronics	3
BMET 440	Biomedical Experiential Learning	3
SDET 310	Computer Design Fundamentals for Software and Data Engineering Technology	3
SDET 315	Computer Architecture for Software and Data Engineering Technology	3
SDET 325	Medical Informatics Technology	3
SDET 341	Visual Basic.NET for Engineering Technology	3
SDET 373	Web App Development for Mobile	3
SDET 395	Co-op Work Experience I	3
SDET 425	Medical Informatics Technology II	3
SDET 440	Visual Basic Applications for Engineering Technology	3

Medical Informatics Specialization:

Code	Title	Credits
Complete the following 4 courses:		
SDET 325	Medical Informatics Technology	
SDET 425	Medical Informatics Technology II	
MIT 326	Electronic Medical Record Design	
R120 141	Anatomy & Physiology	
Techincal Electives:		
Select two of the following:		
IT 220	Wireless Networks	
IT 330	Computer Forensic	
IT 331	Privacy and Information Technology	
IT 332	Digital Crime	
IT 430	Ethical Hacking for System Administrators	

CS 434	Advanced Database Systems
CS 608	Cryptography and Security
CS 639	Elec. Medical Records: Med Terminologies and Comp. Imp.
R120 102	General Biology II
R120 142	Anatomy & Physiology

Concentration in Technology Education

(120 credits)

First Year		
1st Semester		**Credits**
MATH 138	General Calculus I	3
PHYS 102	General Physics I	3
PHYS 102A	General Physics I Lab	1
CS 106	Introduction to Computing	3
MET 103	Engineering Graphics and Intro. to CAD	2
ENGL 101	English Composition: Introduction to Academic Writing	3
ET 101	Introduction to Engineering Technology	0
FYS SEM	First-Year Student Seminar	0
	Term Credits	**15**
2nd Semester		
MATH 105	Elementary Probability and Statistics	3
PHYS 103	General Physics II	3
PHYS 103A	General Physics II Lab	1
MET 105	Applied Computer Aided Design	2
ENGL 102	English Composition: Introduction to Writing for Research	3
Social Science Literacy GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/social-science-ger/)		3
	Term Credits	**15**
Second Year		
1st Semester		
ECET 201	Circuits I	3
Technical Elective		3
Free Elective		3
R300 292	Social Foundation in Urban Edu [1]	3
R300 295	Child and Adolescent Psychology in the Urban Experience	3
	Term Credits	**15**
2nd Semester		
MIT 231	Intro to Comp Security:Med Dev	3
Technical Elective		3
Free Elective		3
STS 201	Understanding Technological Society	3
R300 298	Educational Planning for Dually Exceptional Students	3
	Term Credits	**15**
Third Year		
1st Semester		
MNET 300	Concepts In Machining	3
CET 317	Construction Computing	3
Technical Elective		3
COM 313	Technical Writing	3
R300 454	Science and Technology Content Planning and Teaching in the Urban Classroom I	3
	Term Credits	**15**

2nd Semester		
ENGR 320	Prototyping Essentials	3
ENGR 330	Applications of Microcontrollers and IoT devices	3
Technical Elective (3xx or 4xx)		3
History and Humanities GER 300+ level (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/ger-300-level/)		3
R300 390	Culturally Responsive Assessment and Evaluation	3
R300 455	Sci&Tech Plan/Tch Urb Class II	3
	Term Credits	**18**
Fourth Year		
1st Semester		
ET 450	Multidisciplinary Capstone Project	3
ENGR 425	Advanced Manufacturing Rotation	2
Humanities and Social Science Senior Seminar GER (http://catalog.njit.edu/undergraduate/academic-policies-procedures/general-education-requirements/hss-capstone/)		3
R300 418	Clinical Practice I Seminar [2]	3
R300 419	Clinical Practice I	3
R300 378	Seminar in Critical Writing	1
	Term Credits	**15**
2nd Semester		
R300 487	Clinical Practice II Seminar	3
R300 488	Clinical Practice II	9
	Term Credits	**12**
	Total Credits	**120**

Approved Technical Electives

Code	Title	Credits
MET 205	Advanced Computer Aided Design	3
MET 235	Statics for Technology	3
MET 237	Strength of Materials for Technology	3
CET 313	Construction Procedures I	3
CET 314	Construction Procedures II	3
CMT 452	Mechanical and Electrical Systems for Construction	3
ENGR 301	Engineering Applications of Data Science [3]	3
ENGR 423	Drone Science Fundamentals [3]	3
ENGR 424	Robotics Science Fundamentals [3]	3
MNET 303	Advanced Techniques in CAD/CAM	3
MNET 423	Workplace Design and Measurement	3
SDET 325	Medical Informatics Technology [3]	3
SDET 330	Software Web Applications for Engineering Technology I [3]	3
SDET 341	Visual Basic.NET for Engineering Technology [3]	3
SDET 373	Web App Development for Mobile [3]	3

1 Apply Rutgers – Newark Urban Teacher Education Program
2 Praxis must be taken prior to taking this class.
3 Discuss with advisor for Computer Science Instructional Certificate #1820.