

Articulation Agreement of Academic Programs

between

Framingham State University and University of Massachusetts, Dartmouth

The above institutions hereby enter into an agreement to facilitate the transfer of students enrolled in the Pre-Engineering Program at Framingham State University into the Bachelor of Science in Engineering at University of Massachusetts, Dartmouth.

University of Massachusetts, Dartmouth's designated representative will be the Senior Coordinator for New Student Transfer and Framingham State University's representative will be the Assoc. VP.

University of Massachusetts, Dartmouth
Approval

Framingham State University Approval



Dr. Mohammad Karim
Provost and Executive Vice Chancellor for
Academic and Student Affairs



Dr. Robert Martin
Interim President



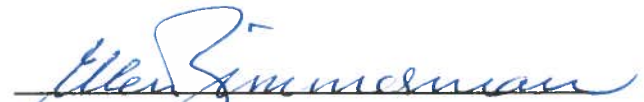
Robert Peck
Dean, College of Engineering



Dr. Linda Vaden-Goad
Vice President for Academic Affairs



Ramprasad Balasubramanian
Interim Associate Dean, College of Engineering



Dr. Ellen Zimmerman
Associate Vice President for Academic Affairs
and Institutional Effectiveness

Date

4/1/14

Objectives:

1. To encourage academic coordination and cooperation, including curricular reviews, on-site visits, and joint academic advising for students attending Framingham State University and University of Massachusetts, Dartmouth.
2. To promote and facilitate an efficient transition of transfer students between institutions.
3. To provide specific information and guidelines for transfer students.
4. To establish a collaborative 2+3 agreement that will enable Framingham State University students in the Undergraduate Pre-Engineering Program to transfer to the Bachelor of Science Engineering degree programs at the University of Massachusetts, Dartmouth.

Stipulations:

1. University of Massachusetts, Dartmouth guarantees acceptance of Framingham State University students who obtain an overall GPA of 2.5 or better at Framingham State University as outlined in this document. In addition, they must have a general academic record that will allow them to be admitted to the College of Engineering at the University of Massachusetts, Dartmouth.
2. Some of the programs might also have a minimum grade requirement for some of the courses listed below.
3. One should anticipate that for a student taking full-time (2 semesters per year) first at Framingham State University and then at the UMass Dartmouth, it would require 5 years to complete the program (2 at FSU and 3 at UMass Dartmouth).
4. Students at FSU who intend to transfer to UMass Dartmouth in an engineering major are encouraged to take courses that are listed below to facilitate the transfer process. The tables provided below will help a student understand how courses taken at FSU will map to specific UMass Dartmouth.

Mutual Responsibilities:

1. Both institutions agree to maintain current listings of the course equivalencies. This will be the responsibility of the two designated representatives.
2. Framingham State University and University of Massachusetts, Dartmouth will incorporate a summary of this agreement into official publications and web sites.
3. Framingham State University and University of Massachusetts, Dartmouth agree to encourage qualified students to participate in this program by providing information, advising, and other assistance required to foster a seamless transition from institution to institution.

Review/Revision:

1. Both institutions will periodically review this agreement. Substantive changes in the courses or program of either institution will require a review of this articulation agreement. Revisions will be implemented with one- year notice prior to termination of the agreement.

Spring 2014

Articulation Agreement

Institution: Framingham State University

Date: 3/25/2014

Transfer Institution: University of Massachusetts, Dartmouth

Summary of Benefits:

- Guaranteed acceptance with a minimum G.P.A. of 2.5
- Guaranteed transfer of credits of all courses with a C- or better, however specific degree programs could require completion at a higher level
- Students transfer with Junior status with regard to financial aid and registration

Framingham State University Program: Pre-Engineering Program	CR	UMass-Dartmouth Program: College of Engineering	CR
General and Elective Requirements			
ENGL 110 – Expository Writing	4	ENL 101 – Critical Reading & Writing I	3
CHEM 107 – Principles of Chemistry	4	CHM 151 – Principle of Modern Chemistry CHM 161 – Applied Chemistry	3 1
MATH 219 – Calculus I	4	MTH 111 – Analytical Geo & Calculus I	4
EGNR 101 – Intro to Engineering	4	EGR 111 – Introduction to Engineering and Computing	3
CHEM 108 – Principles of Applied Chem and Quantitative Analysis	4	CHM 152 – Principles of Modern Chem II CHM 162 – Applied Chemistry II	3 1
ECON 102 – Principles of Microeconomics	4	ECO 231 – Principles of Microeconomics	3
MATH 220 – Calculus II	4	MTH 112 – Analytical Geo & Calculus II	4
PHYS 211 – Principles of Physics I	4	PHY 113 – Classical Physics I	4
MATH 221 – Calculus III	4	MTH 211 – Calculus III	4
PHYS 212 – Principles of Physics II	4	PHY 114 – Classical Physics II	4
ENGL XXX – Literature Elective	4	ENL XXX – Literature Elective (Cultural World Literature Requirement)	3
Suggested Electives for all Engineering Majors* ECON101–Principles of Macroeconomics*	4	ECO 232 – Prin of Macroeconomics	3
MATH 222 – Differential Equations*	4	MTH 212 – Differential Equations	3
Suggested Electives for Bioengineering** BIOL 160 – Intro to Organismal Biology**	4	BIO 122/132 – Biology of Organisms II with Lab	4
BIOL 161 – Intro to Cell & Molecular Biology**	4	BIO 121/131 – Biology of Organisms I with Lab	4
CSCI 152 – Computer Science I Using JAVA	4	CIS 180 – Object-Oriented Programming	4
CSCI 252 – Computer Science II Using JAVA	4	CIS 181 – Object-Oriented Programming II	4
Total Credits	68	Total Credits	62

BioEngineering:

Year Three

1st Semester

BNG 101 – Intro to Bioengineering	3
ENL 102 – Critical Writing and Reading II	3
EGR 241 – Mechanics I	3
University Studies – Visual & Performing Art	3

2nd Semester

University Studies – US Society	3
MNE 220 – Thermo I	3
ECE 211 – Electrical Engineering I	3
ECE 251 – Electrical Engineering I Lab	1
University Studies – Global Society	3

Year Four

1st Semester

BNG 201 – Bio Engineering Seminar	1
BNG 311 – Exp Design and Analysis	3
BNG 321 – Quantitative A/P for Design	3
BNG 315 – Biomechanics	3
ENL 266 – Technical Communication	3

2nd Semester

BNG 312 – Biotransport	3
BNG 316 – Biomaterials	3
BNG 318 – Biomeasure & Control	3
Specialization	3

Year Five

1st Semester

BNG 411 – Bioengineering Lab	3
BNG 423 – Biosys Analysis & Design	3
EGR 497 – Capstone Design Project I	2
Specialization	3
Specialization	3

2nd

EGR 498 – Capstone Project II	2
Specialization	3

Assumes the following: That FSU students have completed BIOL 160, BIOL 161, and MATH 222 as electives

Mechanical Engineering:

Year Three

1st Semester

EGR 241 – Engineering Mechanics I	3
MNE 231 – Materials Science	4
University Studies Visual & Performing Art	3
ENL 102 – Critical Writing and Reading II	3

2nd Semester

EGR 242 – Engineering Mechanics II	3
MNE 252 – Mechanics of Materials	4
MNE 220 – Engineering Thermodynamics	3
ENL 266 – Technical Communications	3
MNE 101 – Intro to Mech. Eng	3

Year Four

1st Semester

EGR 303 – Engineering Economics	3
EGR 301 – Applied Engineering Math	3
MNE 332 – Fluid Mechanics	4
MNE 345 – Design for Manufacturing	4

2nd Semester

MNE 381 – Design Machine Elements	3
MNE 391 – Mechanical Systems Design	4
ECE 211 – Electrical Engineering I	3
ECE 251 – Electrical Engineering Lab I	1
MNE 311 – Heat Transfer	3
Technical Elective	3

Year Five

1st Semester

MNE 497 – Mech Engineering Design Project I	2
MNE 421 – Thermal Systems Design	4
Technical Elective	3
Technical Elective	3

2nd Semester

Technical Elective	3
MNE 498 – Mech Engineering Design Project II	2
Technical Elective	3
University Studies Global Society	3

Assumes students at FSU have completed MATH 222 as an elective

Electrical Engineering:

Year Three

1st Semester

ENL 102 – Critical Writing and Reading II	3
ECE 160 – Foundations of Comp Engineering I	4
ECE 201 – Circuit Theory I	3.5
ECE 260 – Digital Log & Comp Design	3.5

2nd Semester

ECE 264 – Object Orient. Software Development	4
ECE 202 – Circuit Theory II	3.5
ECE 263 – Embedded System Design	3.5
ENL 266 – Technical Communication	3
ECE 250 – Fundamentals of MATLAB	1

Year Four

1st Semester

ECE 320 – Discrete-Time Linear Systems	3
Engineering Math Elective	3
ECE 311 – Digital Electronics	4
ECE 335 – Electromagnetic Theory I	3
University Studies Global Society	3

2nd Semester

ECE 310 – Engineering Ethics	1
ECE 384 – Random Signals & Noise	3
ECE 321 – Cont.-Time Linear Systems	3
ECE 312 – Analog Electronics	4
ECE 336 – Electromagnetic Theory II	3

Year Five

1st Semester

ECE 457 – Design Project I	3
ECE 471 – Communication Theory	3
Technical Elective	3
Science Elective	3

2nd Semester

ECE 458 – Design Project II	3
Technical Elective	3
Technical Elective	3
University Studies Visual & Performing Art	3

Assumes FSU students have completed MATH 222 and ECON 101 as electives

Civil Engineering:

Year Three

1st Semester

CEN 161 – Civil Engineering Design Graphics	2
ENL 102 – Critical Writing & Reading II	3
EGR 241 – Engineering Mechanics I	3
CEN 209 – Intro Transportation	3
University Studies Visual Performing Art	3

2nd Semester

ENL 266 – Technical Communication	3
EGR 242 – Engineering Mechanics II	3
CEN 202 – Mechanics of Materials	3
CEN 212 – Civil Engineering Materials Lab	1
University Studies Global Society	3

Year Four

1st Semester

BNG 255 – Biology for Engineers	3
CEN 303 – Fluid Mechanics	3
CEN 305 – Soil Mechanics	3
CEN 315 – Soil Mechanics Lab	1
CEN 306 – Structural Analysis	3

2nd Semester

CEN 304 – Intro to Environmental Engineering	3
CEN 314 – Environmental Engineering Lab	1
CEN 325 – Water Res. Engineering	3
CEN 323 – Geotechnical Engineering	3
CEN 313 – Fluid Mechanics Lab	1
CEN 408 – Analysis & Design Steel Structures	3
CEN 334 – Traffic Engineering	3

Year Five

1st Semester

CEN 452 – Ethical, Prof. & Safety Issues	1
EGR 303 – Engineering Economy	3
CEN 411 – Water Quality Engineering	3
CEN 307 – Analysis & Design Concrete Structures	3
CEN 491 – Design Project	2

2nd Semester

CEN 491 – Design Project	2
Technical Elective	3
Technical Elective	3

**Assumes FSU students have completed MATH 222 as an elective
Computer Engineering:**

Year Three

1st Semester

ENL 102 – Critical Writing & Reading II	3
ECE 201 – Circuit Theory I	3.5
ECE 160 – Foundations of Comp Engineering I	4
ECE 260 – Digital Log. & Comp. Design	3.5

2nd Semester

ECE 161 – Foundations of Comp Engineering II	4
ECE 250 – Fundamentals of MATLAB	1
ECE 264 – Object Oriented Software Development	4
ECE 202 – Circuit Theory II	3.5
ECE 263 – Embedded Systems Design	3.5

Year Four

1st Semester

ENL 266 – Technical Communication	3
ECE 311 – Digital Electronics	4
ECE 388 – Embedded Design Project	3
MTH 350 – Applied Discrete Math	3
ECE 257 – Fundamentals of UNIX	2

2nd Semester

ECE 310 – Engineering Ethics	1
MTH 331 – Probability	3
ECE 368 – Digital Design	3
University Studies Visual & Performing Art	3
University Studies Science Elective	3

Year Five

1st Semester

ECE 457 – Design Project I	3
ECE 320 – Discrete-Time Lin. Systems	3
Technical Elective	3
CIS 360 – Algorithms & Data Structures	3
CIS 370 – Design of Operating Systems	3

2nd Semester

ECE 458 – Design Project II	3
Technical Elective	3
ECE 460 – Comp Sys Performance Evaluation	3
University Studies Global Society	3
ECE 369 – Computer Networks	3

Assumes FSU students have completed MATH 222 and ECON 101 as electives
Computer and Information Science

Year Three

1st Semester

CIS 190 – Intro to Procedural Programming	4
CIS 272 – Intro to Computing Systems	4
MTH 181 – Discrete Structures I	3
University Studies Visual & Performing Art	3
ENL 102 – Critical Writing and Reading II	3

2nd Semester

CIS 273 – Computer Organization and Design	4
MTH 182 – Discrete Structures II	3
CIS 280 – Software Specification & Design	4
University Studies Global Society	3

Year Four

1st Semester

CIS 360 – Algorithms and Data Structures	3
CIS 370 – Design of Operating Systems	4
MTH 331 – Probability	3
ENL 266 – Technical Communications	3

2nd Semester

CIS 361 – Models of Computations	3
CIS 362 – Empirical Methods for CS	3
CIS 381 – Social and Ethical Issues of Computing	3
CIS Technical Elective	3

Year Five

1st Semester

CIS 498 – Software Engineering Project I	4
CIS Tech Elective	3
CIS Tech Elective	3
CIS Tech Elective	3

2nd Semester

CIS 499 – Software Engineering Project II	3
CIS 481 – Parallel and Distributed Computing	3

Assumes the following: FSU students have completed CSCI 152, CSCI 252 and ECON 101 as electives.