COLLEGE OF ENGINEERING, BUSINESS, AND EDUCATION

COLLEGE OF ENGINEERING, BUSINESS, AND EDUCATION

School of Engineering Programs

Computer Engineering *Bachelor of Science Degree*

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Curriculum and Program Requirements

The ever increasing use of the computer in today's world offers expanding opportunities in this field of specialization. This program provides a bridge between the disciplines of electrical engineering and computer science. Graduates can enter such fields as chip design, software engineering, robotics, and a variety of computer-controlled applications. This requires the development of the engineering approach through the understanding of engineering mathematics, digital and analog electronics and control, as well as computer languages, computing theory and computer architecture. Design and problem solving form the heart of the discipline and a variety of computer aided design (CAD) tools are utilized to facilitate learning and implementation.

The graduate from this program will obtain the basic education in the first three years. The final year is utilized to explore specific areas of interest. One can choose a software oriented program including such areas as artificial intelligence, knowledge based systems and software design or a hardware oriented program pointing toward computer or integrated circuit design, robotics and networking.

The engineering approach and knowledge of computer structure are the attributes that make it unique. This program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. A total of 132 semester hours are required for graduation.

TRANSFER POLICY

All undergraduate ABET accredited programs students must complete all Engineering major coursework, Engineering and Technical Electives, and STEM coursework at the 300+ level; and Junior/Senior level (as per the program requirements) at the University of Bridgeport.

Students are able to transfer classes, if approved by the chair and dean, outside the University at lower (100-200) levels or Freshman/Sophomore level (as per the program requirements) only at the time of transferring into the program; and based on UB's transfer policy as pertains to evaluation of course descriptions, syllabi and examples of work done in transferred-in classes.

COURSE SUBSTITUTION POLICY

All undergraduate ABET accredited programs students must complete all Engineering major coursework, Engineering and Technical Electives, and STEM coursework at the 300+ level; and Junior/Senior level (as per the program requirements) at the University of Bridgeport; and as per defined in the program requirements. There will be NO course substitutions allowed for these classes as defined in the program requirements.

Substitution courses may be allowed at lower (100-200) levels or Freshman/Sophomore level (as per the program requirements) with the approval of the Department Chair and School Dean.

Program Objectives

Our Computer Engineering Graduates will:

Be proficient in defining and solving engineering problems.

Achieve expertise at developing engineering systems.

Be effective communicators and team players.

Appreciate diversity of opinion, understand ethical issues and demonstrate a commitment towards profession.

Be prepared for lifelong careers and professional growth.

Learning Outcomes

Our Computer Engineering Students will:

Demonstrate comprehension of math, science, and basic computer engineering topics.

Comprehend the design of computer architectures; and integrated systems having major hardware and software components.

Exhibit problem solving skills.

Have the ability to use techniques, skills, and modern engineering tools necessary for engineering practice.

Work effectively on teams.

Demonstrate the ability to identify and apply concepts of engineering economics and project planning.

Demonstrate knowledge of contemporary global and societal issues and their relationship to professional ethics and engineering solutions.

Demonstrate the ability to plan and conduct laboratory experiments and interpret and report the results.

Exercise strong oral and written communication skills including those needed for technical writing.

Have an awareness of the need for and demonstrate the ability to keep learning throughout life along with an appreciation of diversity in the world and in intellectual areas.

Summary of Requirements

ENGINEERING CORE REQUIREMENTS

CHEM	103	General Chemistry I	4
CPEG	210	Digital System Design I	3
CPEG	286	Microprocessor System Design	3
CPSC	101/101a	Introduction to Computing I	4
ELEG	233/235	Electrical Engineering I w/lab	4
ENGR	111	Introduction to Engineering I	3
ENGR	300	Econ. and Management of Engr Project	3
MATH	215	Calculus III	4
MATH	301	Differential Equations	3
MATH	323	Probability and Statistics	3
MEEG	223	Materials Science for Engineers	3
			37

PROGRAM REQUIREMENTS

CPEG	312	Computer Organization	3
CPEG	315	Digital Systems Design II w/lab	4
CPEG	387	Embedded System Design	3
CPEG	308	Operating Systems	3
CPEG	347/348	Logic Synthesis/VLSI Design	3
CPEG	349 A, B	CPEG Senior Design Project	4
CPEG	389	Software Engineering	3
CPSC	102/102a	Introduction to Computing II (Data Structures and Algorithms)	4
CPSC	227	Discrete Structures	3
ELEG	234/236	Network Analysis II w/Lab	3
ELEG	348	Electronics I	3
ELEG	317	Intro to Control Systems	3
ELEG	333	Signals and Systems	3
ENGL	204	Technical Writing for CPEG	1
MATH	214/314	Linear Algebra/Numerical Analysis	3
		Technical Elective	6
		Free Elective	3
			55

Computer Engineering *Bachelor of Science Degree*

GENERAL EDUCATION REQUIREMENTS

ENGL	C101	Composition & Rhetoric	3
MATH	110	Calculus I	4
MATH	112	Calculus II	4
PHYS	111/112	Principles of Physics I, II	8
HUM		Humanities Core	6
SOSC		Social Sciences Core	6
INTST	C101B	Computer Ethics	3
FA		Fine Arts Core	3
CAPS	C390	Capstone Seminar	3
			40

Total Semester Hour _____ **132**

Suggested Program

FIRST SEMESTER

ENGL	C101	Composition & Rhetoric	3
MATH	110	Calculus I	4
PHYS	111	Principles of Physics I	4
CPSC	101/101a	Introduction to Computing I	4
ENGR	111	Introduction to Engineering I	3

SECOND SEMESTER

INTST	C101B	Computer Ethics	3
MATH	112	Calculus II	4
CPSC	102/102a	Intro. to Computing II	4
		(Data Structures & Algorithms)	
CPSC	227	Discrete Structures	3
PHYS	112	Principles of Physics II	4

THIRD SEMESTER

MATH	215	Calculus III	4
ELEG	233/235	Electrical Engineering I w/lab	4
CPEG	210	Digital System Design I	3
HUM		Humanities Core	3
CHEM	103	General Chemistry I	4

FOURTH SEMESTER

MATH	301	Differential Equations	3
MEEG	223	Material Science for Engineers	3
ELEG	234/236	Network Analysis II w/Lab	3
HUM		Humanities Core	3
CPEG	286	Microprocessor System Design	3
ENGL	204	Technical Writing for CPEG	1

FIFTH SEMESTER

ENGR	300	Econ. and Management of Engr Proj.	3
MATH	323	Probability and Statistics	3
ELEG	317	Intro to Controls Systems	3
SOSC		Social Sciences Core	3
CPEG	315	Digital Design II w/lab	4
CPEG	387	Embedded System Design	3

SIXTH SEMESTER

CPEG	312	Computer Organization	3
MATH	214/314	Linear Algebra/Numerical Analysis	3
ELEG	348	Electronics I	3
FA		Fine Arts Core	3
SOSC		Social Science Core	3

SEVENTH SEMESTER

CPEG	349A	CPEG Senior Design Project	1
ELEG	333	Signals and Systems	3
CPEG	389	Software Engineering	3
		Technical Electives	3
CPEG	347/348	Logic Synthesis/VLSI Design	3

EIGHTH SEMESTER

CPEG	349B	CPEG Senior Design Project	3
CAPS	C390	Capstone Seminar	3
CPEG	308	Operating Systems	3
		Technical Electives	3
		Free Elective	3

*Technical Elective – This elective must be chosen from any senior level/graduate level course in CPEG /CPSC/ELEG like CPEG 371, CPEG 410, CPEG 415, CPEG 460, CPEG 472, CPEG 473, CPEG 540, CPSC 400, CPSC 440, ELEG 451, ELEG 458

Computer Science *Bachelor of Science Degree*

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Curriculum and Program Requirements

Today, computing is an enormously vibrant field. From its inception just half a century ago, computing has become the defining technology of our age. Computers are integral to modern culture and are the primary engine behind much of the world's economic growth. The field, moreover, continues to evolve at an astonishing pace. New technologies are introduced continually, and existing ones become obsolete in the space of a few years. The rapid evolution of the discipline has a profound effect on computing education, affecting both content and pedagogy.

Computer science core courses provide basic coverage of algorithms, data structures, software design, concepts of programming languages, and computer organization and architecture. Theoretical foundations, problem analysis, and solution design are stressed within the program's core materials. Students are exposed to a variety of programming languages and systems and become proficient in more than one higher-level language. A total of 130 semester hours is required for graduation.

Program Objectives

Our Computer Science Students will:

Be proficient in defining and solving problems appropriate to computer science.

Achieve expertise at developing software systems.

Be effective communicators and team players.

Appreciate diversity of opinion, understand ethical issues and demonstrate a commitment towards profession. Be prepared for lifelong careers and professional growth.

Learning Outcomes

Our Computer Science Students will:

Demonstrate comprehension of math, science, and basic computer science topics.

Have the ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems.

Exhibit problem solving skills.

Have the ability to use techniques, skills, and modern software tools necessary for professional practice.

Work effectively in teams.

Demonstrate the ability to identify and apply concepts of engineering economics and project planning.

Demonstrate knowledge of contemporary global and societal issues and their relationship to professional ethics and engineering solutions.

Demonstrate the ability to plan and conduct laboratory experiments and interpret and report the results.

Exercise strong oral and written communication skills including those needed for technical writing.

Have an awareness of the need for and demonstrate the ability to keep learning throughout life along with an appreciation of diversity in the world and in intellectual areas.

Summary of Requirements

MATHEMATICS REQUIREMENTS

MATH 110/112	Calculus I & II	8
MATH 215	Calculus III	4
MATH 323	Probability and Statistics	3
MATH 214, MATH 314 or CPSC 340	Math Elective	3
	Science Elective	4
		22

GENERAL EDUCATION REQUIREMENTS

ENGL C101	Composition & Rhetoric I	3
FA	Fine Arts Core	3
PHYS 111, 112	Principles of Physics I, II	8
INTST C101B	Computer Ethics	3
ENGL 204	Technical Writing for Computer Science	1
HUM	Humanities Core	6
SOSC	Social Science Core	6
CAPS C390	Capstone Seminar	3
	Humanities Electives (2)	6
		39

CORE REQUIREMENTS

CPSC	101/101a	Introduction to Computing I	4
CPSC	102/102a	Introduction to Computer II (Data Structures)	4
CPSC	201	Advanced Data & File Structures	3
CPSC	203	2nd Programming Language	3
CPSC	227	Discrete Structures	3
CPEG	210	Digital System Design I	3
CPEG	286	Microprocessor System Design	3
CPSC	300	Economics & Management of Computing Projects	3
CPSC	301	Programming Languages	3
CPSC	329	Fundamentals of Algorithms	3
CPSC	311	Computer Architecture	3
CPEG	408	Operating Systems	3
CPSC	449	Senior Design Project	4
CPSC	450	Database Design	3
CPEG	471	Data and Computer Communications	3
CPSC	489	Software Engineering	3
		CPSC Elective (3)	9
		Technical Elective (2)	6
		Free Elective	3
			69

Total Semester Hours _____ **130**

Suggested Program

FIRST SEMESTER

ENGL	C101	Composition & Rhetoric I	3
MATH	110	Calculus I	4
CPSC	101/101a	Int. to Computing I	4
PHYS	111	Principles of Physics I	4

SECOND SEMESTER

MATH	112	Calculus II	4
PHYS	112	Principles of Physics II	4
CPSC	102/102a	Introduction to Computing II (Data Structures)	4
INTST	C101B	Computer Ethics	3

THIRD SEMESTER

CPSC	227	Discrete Structures	3
MATH	215	Calculus III	4
		PHYS/CHEM/BIOL	4
HUM		Humanities Core	3
CPSC	201	Advanced Data & File Structures	3

FOURTH SEMESTER

MATH		Math Elective(214/314/340)	3
CPSC	203	2nd Language	3
ENGL	204	Technical Writing For Computer Science	1
FA		Fine Arts Core	3
HUM		Humanities Core	3
CPEG	210	Digital System Design I	3

Computer Science *Bachelor of Science Degree*

FIFTH SEMESTER

CPSC	300	Economics & Management of Computing Projects	3
MATH	323	Probability and Statistics	3
CPSC	301	Programming Languages	3
SOSC		Social Science Core	3
CPSC	329	Fundamentals of Algorithms	3
CPEG	286	Microprocessor System Design	3

SIXTH SEMESTER

CPEG	408	Operating Systems	3
		Humanities Elective I	3
CPSC		Elective I	3
SOSC		Social Science Core	3
CPSC	311	Computer Architecture	3
		Technical Elective I	3

SEVENTH SEMESTER

CPSC	450	Database Design	3
CPEG	489	Software Engineering	3
CPEG	471	Data and Computer Communications	3
		CPSC Elective II	3
		Technical Elective II	3
CPSC	449A	Senior Design Project	1

EIGHTH SEMESTER

CAPS	C390	Capstone Seminar	3
		Free Elective	3
		CPSC Elective III	3
		Humanities Elective II	3
CPSC	449B	Senior Design Project	3

Total Semester Hours 130

Electrical Engineering *Bachelor of Science Degree*

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Curriculum and Program Requirements

Electrical Engineering is the basis of Computer Engineering, Computer Science, and Biomedical Engineering. We tend to be excited by the breakthroughs in smart phones, i-pads/minicomputer, improved medical machinery, GPS, and a host of other gadgets that make our modern life more exciting and more comfortable. Electrical Engineering is the field that gives us the applied science to build all of these gadgets. It is also the field from which the knowledge will come for the creation of new gadgets and for the improvement of present-day machine.

Since it is a universal degree, the BSEE graduate is flexible – the graduate can bend their talents to satisfy the needs of an ever-changing needs technology. This promotes job security for the graduate, and it feeds the appetite of an advancing society.

The graduate of this program will obtain the basic education in the first three years. The last year is utilized to explore specific areas of interest. Our graduates will have expertise in at least one sub-field of Electrical Engineering such as electricity, machines/controllers, energy/power, signals/communications, materials, and electronic device analysis.

Program Objectives

Graduates of the University of Bridgeport's English program will be able to:

1. Demonstrate peer-recognized expertise and problem solving skills providing solutions to the problems in industry, academia as well as other disciplines in the field they choose to pursue. [Problem Solving]

2. Demonstrate the capacity to embrace new opportunities and adapt to changes in emerging technologies, developing future state-of-the art designs and products. [Engineering System Design]

3. Demonstrate leadership skills and facilitate the achievement of others while collaborating with professionals in a multidisciplinary environment. [Communication]

4. Demonstrate their creative and critical reasoning skills while solving technical problems, ethically and responsibly, in service to society. [Contemporary issues]

5. Demonstrate life-long learning and adaptation to a continuously changing field through graduate work, professional development, and self-study. [LLL/Work/Grad School]

Learning Outcomes

Graduates of the University of Bridgeport's Electrical Engineering program will be able to:

1. Demonstrate knowledge and the ability to apply knowledge of continuous and discrete math, science and electrical engineering in the analysis of electrical engineering problems. [Fundamentals]

2. Demonstrate knowledge of core electrical engineering topics and an ability to design systems, including hardware and/or software components.[Design]

3. Exhibit an ability to identify, formulate and solve electrical engineering problems. [Problem Solving]

4. Demonstrate the ability to use techniques, skills and modern engineering tools for design and analysis. [Techniques/Skills]

5. Exhibit an ability to function in a multidisciplinary team. [Team Work]

6. Demonstrate the ability to identify and apply concepts of engineering economics and project planning. [Engr Econ/Planning]

7. Demonstrate knowledge of contemporary global and societal issues and their relationship to professional ethics and engineering solutions.[Ethics/Profession]

8. Have an ability to design and conduct scientific and engineering experiments and to analyze and interpret data. [Experiment/ Results]

9. Exhibit an ability to convey technical material through oral presentation and formal written reports/paper. [Communication]

10. Have an awareness of the need and the ability to demonstrate learning throughout life along with an appreciation of the diversity in the world and intellectual areas. [Diversity and LLL]

ENGINEERING CORE REQUIREMENTS

CHEM	103	General Chemistry I	4
ELEG	210	Digital System Design I	3
CPEG	286	Microprocessor System Design	3
CPSC	101	Introduction to Computing I	3
ENGR	111	Introduction to Engineering I	3
CPEG	300	Econ. and Management of Engr Project	3
MATH	215	Calculus III	4
MATH	301	Differential Equations	3
			Total 26

PROGRAM REQUIREMENTS

ELEG	208	Engineering Mathematics	3
ELEG	337/344	Analog Electronics Lab	3
CPEG	315	Digital Systems Design II w/lab	4
ELEG	233/235	Network Analysis I w/lab	4
ELEG	234/236	Network Analysis II w/Lab	3
ELEG	342	Modern Communications	3
ELEG	348	Electronics I	3
ELEG	315/316/350	Communications	3
ELEG	317	Controls	3
ELEG	317	Controls	3
ELEG	333	Signals and Systems	3
ELEG	364	Programmable Logic Control	3
MATH	323	Probability and Statistics	3
ELEG	349	Senior Design Project	4
		Technical (EE) Elective	6
ELEG	(300+level)	Electives	12
			Total 60

GENERAL EDUCATION REQUIREMENTS

ENGL	101	Composition & Rhetoric	3
MATH	110	Calculus I	4
MATH	112	Calculus II	4
PHYS	111/112	Principles of Physics I, II	8
HUM		Humanities Core	6
SOSC		Social Sciences Core	6
FA		Fine Arts Core	3
			Total 34

Total Semester Hours   **120**

Suggested Program

SEMESTER 1

CPSC	101	Intro to Computing with lab	3
ENGR	111	Intro to Engineering	3
ENGL	101	Composition and Rhetoric	3
MATH	110	Calculus	4
ELEG	208	Engineering Mathematics	3
			TOTAL 16

Electrical Engineering *Bachelor of Science Degree*

SEMESTER 2 _____

PHYS	111	Principles of Physics I, with lab	4
MATH	112	Calculus II	4
CHEM	103	General Chemistry with lab	4
		Social Science Elective	3
		TOTAL	15

SEMESTER 3 _____

PHYS	112	Prin of Physics II with lab	4
ELEG	233	Network Analysis I	3
ELEG	235	Network Analysis I lab	1
MATH	215	Calculus III	4
		Humanities Elective	3
		TOTAL	15

SEMESTER 4 _____

ELEG	234	Network Analysis II	2
ELEG	236	Network Analysis II lab	1
MATH	301	Differential Equations	3
		Fine Arts Elective	3
		Social Science Elective	3
ELEG	210	Digital Design I	3
		TOTAL	15

SEMESTER 5 _____

ENGR	300	Economics for Engineers	3
ELEG	317	Controls	3
MATH	323	Probability and Statistics	3
ELEG	348	Electronics	3
ELEG	286	Microprocessors	3
		TOTAL	15

SEMESTER 6 _____

ELEG	337	Analog Electronics Lab	3
ELEG	364	Programmable Logic control	3
ELEG		Communications course	
		(EE 315, EE 316/416, EE 350/450)	3
ELEG	351	Modern Communications	3
CPEG	315	Digital Design II with Lab	4
		TOTAL	16

SEMESTER 7 _____

ELEG	333	Signals and Systems	3
ELEG	349A	Senior Design Project	2
ELEG (300+level) Electives			6
		Humanities Elective	3
		TOTAL	14

SEMESTER 8 _____

ELEG 349B	Senior Design Project	2
ELEG (300+level) Electives		6
	ENGR/Tech Electives	6
	TOTAL	14

Total Credit Hours:_____**120**

Mechanical Engineering *Bachelor of Science Degree*

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Curriculum and Program Requirements

Mechanical engineers apply the principles of motion, force, energy, and materials for the design, development, analysis, manufacturing, testing and maintenance of mechanical systems. Mechanical engineers are suited for employment in a wide range of industries, including aerospace, automotive, biomedical, chemical, electronics, robotics, power-generation, sports, and telecommunication.

The mechanical engineering program combines in depth studies with lab and project experience to help students acquire knowledge and skills needed for successful careers or graduate studies. Students develop competence or acquire knowledge in a many areas, including engineering fundamentals, computer aided engineering tools, communication skills, design of individual components and multicomponent systems, manufacturing processes, mechanical systems, professional ethics, laboratory exploration, and more.

The graduate of this program will obtain a foundation in mathematics and science for the mechanical engineering courses offered in the third and fourth years. In their senior year, students have the opportunity to broaden and deepen their technical background through three advanced elective courses and design projects in applied areas such as aerospace engineering, mechanical design, manufacturing and materials processing, thermal and fluid engineering, mechatronics and automation, and biomedical engineering. Engineering design experience using CAD/CAM systems are integrated throughout the curriculum.

A total of 121 semester hours are required for graduation.

Program Objectives

Our Mechanical Engineering graduates will:

1. Develop problem solving skills by providing solutions to the problems in industry, academia as well as other disciplines in the field they choose to pursue. [Problem Solving]

2. Demonstrate the capacity to embrace new opportunities and adapt to changes in emerging technologies, developing future state-of-the art designs and products. [Engineering System Design]

3. Demonstrate leadership skills and facilitate the achievement of others while collaborating with professionals in a multidisciplinary environment. [Communication]

4. Demonstrate their creative and critical reasoning skills while solving technical problems, ethically and responsibly, in service to society. [Contemporary issues]

5. Engage in life-long learning for adaptation to a continuously changing field through graduate work, professional development, and self-study. [LLL/Work/Grad School]

Learning Outcomes

Our Mechanical Engineering graduates will:

1. Demonstrate knowledge and the ability to apply knowledge of math, science and engineering in the analysis of mechanical engineering problems. [Fundamentals]

2. Have an ability to design and conduct scientific and engineering experiments and to analyze and interpret data. [Experiment/ Results]

3. Demonstrate knowledge of core mechanical engineering topics and an ability to design mechanical components and systems. [Design]

4. Exhibit an ability to function in a multidisciplinary team. [Team Work]

5. Exhibit an ability to identify, formulate and solve mechanical engineering problems. [Problem Solving]

6. Demonstrate knowledge of contemporary global and societal issues and their relationship to professional ethics and engineering solutions. [Ethics/Profession]

7. Exhibit an ability to convey technical material through oral presentation and formal written reports/paper. [Communication]

8. Demonstrate the ability to identify and apply concepts of engineering economics and project planning. [Engr Econ/Planning]

9. Have an awareness of the need and the ability to demonstrate learning throughout life along with an appreciation of the diversity in the world and intellectual areas. [Diversity and LLL]

10. Demonstrate the ability to use techniques, skills and modern engineering tools for design and analysis. [Techniques/Skills]

ENGINEERING CORE REQUIREMENTS

CHEM 103	General Chemistry I	4
CPSC 101	Introduction to Computing I	3
ELEG 233/235	Electrical Engineering I w/lab	4
ENGR 111	Introduction to Engineering I	3
ENGR 300	Econ. and Management of Engr Project	3
MATH 215	Calculus III	4
MATH 301	Differential Equations	3
MATH 323	Probability and Statistics	3
	Total	27

PROGRAM REQUIREMENTS

MEEG 112	Engineering Graphics	3
MEEG 223	Materials Science for Engineers	3
MEEG 250	Engineering Mechanics: Statics	3
MEEG 252	Engineering Mechanics: Dynamics	3
MEEG 203	Thermodynamics	3
MEEG 310	Mechanics of Materials	3
MEEG 307	Fluid Mechanics	3
MEEG 363	Heat and Mass Transfer	3
MEEG 380	Mechanical Measurement and Data Analysis	3
MEEG 372	Manufacturing Engineering	3
MEEG 315	Mechanical Vibrations	3
MEEG 350D	Machine Design	3
MEEG 381	Mechanical Engineering Systems Lab	3
MEEG 369D	Thermal Fluid Systems Design	3
MEEG 361/362	Senior Design Project	6
	Technical Elective	12
	Total	60

GENERAL EDUCATION REQUIREMENTS

ENGL C101	Composition & Rhetoric	3
MATH 110	Calculus I	4
MATH 112	Calculus II	4
PHYS 111/112	Principles of Physics I, II	8
HUM	Humanities Core	6
SOSC	Social Sciences Core	3
FA	Fine Arts Core	3
	Total	34

Total Semester Hours _____ **121**

Mechanical Engineering *Bachelor of Science Degree*

Suggested Program

FIRST SEMESTER

CPSC 101	Introduction to Computing with lab	3
ENGR 111	Introduction to Engineering	3
MATH 110	Calculus I	4
CHEM 103	General Chemistry with lab	4

SECOND SEMESTER

MEEG 112	Engineering Graphics	3
MATH 112	Calculus II	4
PHYS 111	Principles of Physics I, with lab	4
ENG C101	Composition and Rhetoric	3
HUM	Humanities Core	3

THIRD SEMESTER

MEEG 250	Engineering Mechanics: Statics	3
ELEG 233	Network Analysis I with Lab, aka Circuits I with Lab	3
MEEG 215	Calculus III	4
PHYS 112	Principles of Physics II, with lab	4

FOURTH SEMESTER

MEEG 252	Engineering Mechanics: Dynamics	3
MEEG 203	Thermodynamics	3
MEEG 223	Material Selection for Engineers	3
MATH 301	Differential Equations	3
HUM	Humanities Core	3

FIFTH SEMESTER

MEEG 310	Mechanics of Materials	3
MEEG 307	Fluid Mechanics	3
ENGR 300	Economics and Management of Engineering Projects	3
MATH 323/214	Probability and Statistics/Linear Algebra	3
SOSC	Social Science Core	3

SIXTH SEMESTER

MEEG 363	Heat and Mass Transfer	3
MEEG 380	Mechanical Measurement and Data Analysis	3
MEEG 372	Manufacturing Engineering	3
MEEG 315	Mechanical Vibrations	3
SOSC	Social Science Core	3

SEVENTH SEMESTER

MEEG 350D	Machine Design	3
MEEG 381	Mechanical Engineering Systems Lab	3
MEEG 361	Senior Design Project	3
	Technical Elective	3
CAPS C390	Senior Capstone	3

EIGHTH SEMESTER

MEEG 369D	Thermal Fluid System Design	3
MEEG 362	Senior Design Project	3
FA	Fine Arts Core	3
	Technical Electives	6

Biomedical Engineering *Master of Science Degree*

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Master of Science degree in Biomedical Engineering (BME) is intended to prepare individuals with a strong scientific and technical background for entry into Biomedical Engineering field at an advanced level and for further study leading to doctorate. Admission to the interdisciplinary BME program requires an undergraduate background that includes elementary coursework in biomedical engineering, biotechnology, biology, clinical science, pharmaceutical science and also includes any branch of science and engineering that permeates through the Fundamentals and advanced courses in engineering and the life sciences. The program offers innovative educational strategy that integrates biological sciences and engineering, and applies engineering tools, methods and practices to solve problems in biology and medicine. Graduates of our programs are expected to be highly-skilled biomedical engineers, and scientists who understand the ethical, social and economic implications of their work. The following fundamental course work has been identified to benefit the students most if they have them in their undergraduate degrees.

- Biomedical Materials and Engineering
- Tissue Engineering
- Bioelectronics
- Tissue culture
- Physiology

Applicants with superior academic credentials but lacking the required background can be admitted subject to their taking the necessary preparatory courses. Applicants are expected to have an average B or better in their undergraduate course work. Department offers the unique opportunity to its graduate students the education and research on how to integrate several engineering discipline principles in biomedical engineering.

The Department also offers, as an integral part of the Biomedical Engineering Masters Degree, the opportunity to specialize in several concentration areas.

1. Biomedical Materials and Engineering
2. Bioelectronics
3. Biotechnology
4. Biomedical signal and Image Processing
5. Embedded Systems
6. Bioinformatics
7. Nanotechnology in Bioengineering
8. Tissue Engineering
9. Bioinstrumentation
10. Biorobotics and automation

In addition the department also offers the opportunity to acquire dual graduate degree with electrical engineering (dual MS degree in BME/ELEG) as well as mechanical engineering (Dual MS in BMEG/MEEG). Candidates for the dual Masters Degree programs are typically required to complete a minimum total of 49 credit hours to satisfy the requirement of two Masters Degrees. This implies 15 credit hours in addition to the 34 credits required for the MS degree in Biomedical Engineering.

Learning Outcomes

Consistent with the university's vision, and with the missions of the School of Engineering and the Biomedical Engineering Program, the educational objectives for the Master of Science in Biomedical Engineering program were established as follows:

Graduates of the BME program will have a sound integrated knowledge of science and engineering fundamentals with respect to the biomedical issues.

Graduates will be proficient in the use of modern techniques, tools, procedures, and information sources which are useful in the definition and solution of problems in biomedical engineering.

Graduates will have the ability to apply their scientific knowledge and engineering tools and techniques to design useful and economically feasible novel materials, devices, systems and processes which address problems relevant to the fields of biomedical engineering.

Graduates will have the breadth and depth of knowledge, and a commitment to continued learning, necessary to understand the economic, social, ethical, and aesthetic aspects of their profession and their work, and to effectively communicate the results of their work.

Course Requirements

REQUIRED COURSES _____

A. A total of 34 semester hours is required. The core curriculum consists of 16 credits and includes:

BMEG 565	Biomedical Materials and Engineering (3 credits)
BMEG 412	Bioelectronics (3 credits)
BMEG 580	Tissue Engineering (3 credits)
BMEG 620	Team based research (6 credits)
ENGR 400	Seminar (1 credit)

B. The remaining 18 credits are elective courses.

The elective courses may be chosen from the list of BME concentration areas or chosen in consultation with the graduate advisor. The course descriptions are in the Graduate Studies Division section of the Catalog.

C. A team based research project of 6 credits is compulsory and the course number for that is BMEG 620 as mentioned under core courses

CORE COURSES _____

BMEG 410	Biosensors
BMEG 412	Bioelectronics
BMEG 440	Ergonomic Factors in Design
BMEG 451	Introduction to BioMEMS
BMEG 413	Bioinformatics
BMEG 508	Biomechanics
BMEG 561	Instrumental Analysis of Nanomaterials
BMEG 537	Biophysical Fluid Mechanics
BMEG 510	Medical Machines
BMEG 515	Advanced Digital Systems
BMEG 535	Foundations of Biotechnology and Bio-enterpreneurship
BMEG 543	Digital Signal Processing
BMEG 545	Genetics and Genomics
BMEG 546	Bio Signal Processing
BMEG 547	BioMEMS
BMEG 560	Advanced Materials and Engineering
BMEG 562	Nanofabrication with Softmaterials
BMEG 563	Polymer Nanocomposite
BMEG 565	Biomedical Materials and Engineering
BMEG 574	Pathology in Bioengineering
BMEG 580	Tissue Engineering
BMEG 573	Magnetobioengineering
BMEG 577	Cancer and Engineering
BMEG 578	Biomedical Imaging
BMEG 587	Embedded Systems Design

Computer Engineering *Master of Science Degree*

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The Master's Degree in Computer Engineering is a course of study intended to prepare individuals whose undergraduate background is in computer or electrical engineering for advanced professional work in the field and for further study leading to the doctorate. Emphasis is placed on current state-of-the-art applications including computer architecture, FPGA and VLSI design, parallel computing, quantum computing, computer vision, artificial intelligence, sensing, robotics, automation, networking and network security, internet of things (IOT), and the like. Admission to the program requires an undergraduate degree in engineering, and includes the following fundamental coursework:

- Programming Languages
- Data Structures
- Digital Design
- Digital Design Lab
- Computer Organization
- Microprocessors
- Probability and Statistics

Applicants with superior academic credentials but lacking the required background can be admitted subject to their taking the necessary preparatory courses. Applicants are expected to have an average of B or better in their undergraduate coursework.

The Department also offers, as an integral part of the Computer Engineering Masters Degree, the opportunity to specialize in several concentration areas.

Computer Engineering Concentration areas:

1. Advanced Applications and Systems Programming
2. VLSI and FPGA Design
3. Computer and Information Security
4. Computer Communications and Networking
5. Artificial Intelligence
6. Microelectronics and Computer Architecture
7. IOT and Embedded Systems
8. Robotics and Automation
9. Signal and Image Processing
10. Software Engineering
11. Parallel and Distributed Computing

Please refer to the Graduate Studies Division Catalog pages for course details of the concentration areas.

In addition, the department also offers the opportunity to acquire dual graduate degrees along with the M.S. degree in Computer Engineering. Candidates for these dual Masters degree programs are typically required to complete a total of 52 credit hours to satisfy the requirements of two Masters degrees. This implies 18 credit hours in addition to the 34 hours required for the M.S. degree in Computer Engineering.

Please refer to the Graduate Studies Division catalogue pages for detailed information on Dual Graduate Degree programs.

Furthermore, customized study plans to allow receiving the Computer Engineering M.S. degree while pursuing either the Ph.D. degree in Computer Science and Engineering or the Ed.D. degree in Education are available. Doctoral students in these two programs should consult their respective doctoral advisors to work on their individualized plans. Further details on the dual M.S. in Computer Engineering degree programs are available in the catalog section on the Graduate Studies Division.

Program Objectives

Our Computer Engineering Students will:

Apply foundational scientific concepts and sound engineering principles efficiently and effectively.

Be well-educated, highly valued, and successful engineers and scientists.

Significantly contribute to technical interdisciplinary team projects.

Professionally communicate technical solutions and results.

Continue to pursue lifelong multidisciplinary learning as professional engineers and scientists.

Learning Outcomes

Our Computer Engineering Students will:

Demonstrate an in depth and comprehensive understanding of Computer Engineering.

Have an enhanced ability to learn, on their own, technical details for which they are responsible.

Have an enhanced ability to apply the knowledge learned to solve technical problems that arise in research they conduct or supervise.

Have an enhanced ability to study an issue, identify and evaluate alternative actions, propose an optimal course of action.

Have an enhanced ability to prepare technical point papers, brief their seniors, and defend their conclusions.

Course Requirements

REQUIRED COURSES

A. A total of 34 semester hours is required. The core curriculum consists of 15 credits and includes:

CPSC	501	Object Oriented Programming using Software Design Patterns Using C++
CPEG	510	Introduction to Computer Architecture
CPEG	572	Data and Computer Communication
CPEG	448D	Introduction to VLSI Design
or CPEG	447	Logic Synthesis Using FPGAs
ELEG	443	Applied Digital Signal Processing

B. THE REMAINING 18 CREDITS ARE ELECTIVE COURSES.

The elective courses may be chosen from the list of Computer Engineering concentration areas or chosen in consultation with the graduate advisor. Also, students are required to take ENGR 400 (Engineering Colloquium).

The course requirements of the concentration areas are described in the Graduate Studies Division section of the catalog.

C. STUDENTS MUST DO A MASTERS PROJECT (3 CREDIT HOURS) OR THESIS (6 CREDIT HOURS) AS PART OF THE 18 ELECTIVE CREDIT HOURS.

The concentration areas can be applied to satisfy the requirements of second Masters degree programs of study.

Computer Science *Master of Science Degree*

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The Master's Degree in Computer Science is intended to prepare individuals with a strong mathematical, scientific, or technical background for entry into the computer science field at an advanced level and for further study leading to the doctorate. Admission to the program requires an undergraduate background that includes elementary physics, calculus sequence, linear algebra, and the following fundamental coursework in computer science:

- Programming Languages and Technique
- Data Structures and Algorithms
- Digital Design
- Discrete Structures
- Computer Organization
- Probability and Statistics

Applicants with superior academic credentials but lacking the required background can be admitted subject to their taking the necessary preparatory courses. Applicants are expected to have an average of B or better in their undergraduate coursework.

The Department also offers, as an integral part of the Computer Science Masters Degree, the opportunity to specialize in several concentration areas.

Computer Science Concentration Areas:

1. Advanced Applications and Systems Programming
2. Artificial Intelligence and Deep Learning
3. Computer Vision and Autonomous Vehicles
4. Computer and Information Security
5. Computer Communications and Networking
6. Cloud, Web, Services Oriented Architecture and Blockchain technologies
7. Big Data, Data Mining and Hadoop NoSql
8. Robotics and Automation
9. Internet Of Things (IOT) and Embedded Systems
10. Software Engineering
11. Parallel and Distributed Processing

Please refer to the Graduate Studies Division Catalog pages for course details of the concentration areas.

In addition, the department also offers the opportunity to acquire dual graduate degrees along with the M.S. degree in Computer Science. Candidates for these dual Masters degree programs are typically required to complete a total of 52 credit hours to satisfy the requirements of two Masters degrees. This implies 18 credit hours in addition to the 34 hours required for the M.S. degree in Computer Science.

Please refer to the Graduate Studies Division catalogue pages for detailed information on Dual Graduate Degree programs.

Furthermore, customized study plans to allow receiving the Computer Science M.S. degree while pursuing either the Ph.D. degree in Computer Science and Engineering are available. Doctoral students in the program should consult their respective doctoral advisors to work on their individualized plans. Further details on the dual M.S. in Computer Science degree programs are available in the catalog section on the Graduate Studies Division.

Program Objectives

Our Computer Science Students will:

Apply foundational scientific concepts and sound engineering principles efficiently and effectively.

Be well-educated, highly valued, and successful engineers and scientists.

Significantly contribute to technical interdisciplinary team projects.

Professionally communicate technical solutions and results.

Continue to pursue lifelong multidisciplinary learning as professional engineers and scientists.

Learning Outcomes

Our Computer Engineering Students will:

Demonstrate an in depth and comprehensive understanding of Computer Science.

Have an enhanced ability to learn, on their own, technical details for which they are responsible.

Have an enhanced ability to apply the knowledge learned to solve technical problems that arise in research they conduct or supervise.

Have an enhanced ability to study an issue, identify and evaluate alternative actions, propose an optimal course of action.

Have an enhanced ability to prepare technical point papers, brief their seniors, and defend their conclusions.

Course Requirements

REQUIRED COURSES

A. A TOTAL OF 34 SEMESTER HOURS IS REQUIRED. THE CORE CURRICULUM CONSISTS OF 6 CREDITS AND INCLUDES:

CPSC 501	Object Oriented Programming with Design Patterns
CPSC 502	Analysis of Algorithms

B. THE REMAINING 28 CREDITS ARE ELECTIVE COURSES.

The elective courses may be chosen from the list of Computer Science concentration areas or chosen in consultation with the graduate advisor.

The course requirements of the concentration areas are described in the Graduate Studies Division section of the catalog.

C. STUDENTS MUST DO A MASTERS PROJECT (3 CREDIT HOURS) OR THESIS (6 CREDIT HOURS) AS PART OF THE 28 ELECTIVE CREDITS HOURS.

Since July 2004, the Department of Computer Science and Engineering has been offering the full M.S. degree program in Computer Science through distance learning. For more information please contact the department or visit: http://www.bridgeport.edu/ub/dlearning/

The concentration areas can be applied to satisfy the requirements of dual Masters degree programs of study.

Electrical Engineering *Master of Science Degree*

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This Program is designed to increase the student's knowledge and competence in basic areas necessary for Modern Electrical Engineering, while affording sufficient freedom to allow an in-depth study of such areas as Communications, Control Systems, Electronics and Digital Processing. Electrical Engineering department offers five areas of concentration. The concentration areas allow EE students to acquire in-depth knowledge of a specific area of their interest. Each concentration consists of 400 - 600 level specialization courses. EE students, perusing a concertation, will be required to take at least 4 courses from the area of concentration. Student may request to record concentrations on the degree or certificate after completing graduation requirements. Some elective courses, as noted below, may require special permission or additional prerequisites.

1. Power and Renewable Energy
2. Signal Processing and Communications
3. Robotic, automation and PLC
4. VLSI and Integrated Circuits
5. Biomechatronics

Please refer to the Graduate Studies Division Catalog pages for course details of the concentration areas.

In addition, the department also offers the opportunity to acquire dual graduate degrees along with the M.S. degree in Electrical Engineering. Candidates for these dual Masters degree programs are typically required to complete a total of 48 credit hours to satisfy the requirements of two Masters degrees. This implies 18 credit hours in addition to the 30 hours required for the M.S. degree in Electrical Engineering.

Please refer to the Graduate Studies Division catalogue pages for detailed information on Dual Graduate Degree programs.

Furthermore, customized study plans to allow receiving the Electrical Engineering M.S. degree while pursuing either the Ph.D. degree in Computer Science and Engineering or the Ed.D. degree in Education are available. Doctoral students in these two programs should consult their respective doctoral advisors to work on their individualized plans.

Further details on the dual M.S. in Electrical Engineering degree programs are available in the catalog section on Graduate Studies Division.

Admission Requirements

Students must have a Bachelor of Science in Electrical Engineering or a related field. In both cases, the department may require make–up of background deficiencies.

COURSE REQUIREMENTS _____

A. A total of 30 semester hours is required in an approved program of study. Some students in this program enter with an undergraduate record lower than desired. These students are told in their admit letter that they must take 33 or 36 or 39 credits for their MS in E.E program.

B. The Master's thesis is optional. If undertaken, it counts as 6 semester hours and must be conducted under the supervision of an EE Department faculty member. If the Master's thesis is not taken, then EE-597 must be taken for 3 credits.

C. 400 or 500 level courses in Electrical Engineering, Computer Engineering and Computer Science are acceptable, with advisor approval, to count for the course requirements of the MS in E.E program.

D. It is recognized that not all students will have the necessary depth of study in their preparatory program for the MSEE. Consequently, the Department may permit a maximum of two undergraduate electives to be taken for graduate credit.

E. A total of one course in Mechanical Engineering or Technology Management is allowed to be taken toward the Master of Science in electrical Engineering.

The elective courses may be chosen from the list of Electrical Engineering concentration areas or chosen in consultation with the graduate advisor.

The course requirements of the concentration areas are described in the Graduate Studies Division section of the catalog.

The concentration areas can be applied to satisfy the requirements of dual Masters degree programs of study.

Learning Outcomes

Students in the M.S. Electrical Engineering Program will be able to 1) demonstrate the ability to use techniques, skills and modern engineering tools necessary for engineering practice; 2) demonstrate the ability to plan and conduct laboratory experiments and interpret and report results; 3) demonstrate the ability to identify and apply concepts of engineering economics and project planning; 4) demonstrate knowledge of contemporary global and societal issues and their relationship; and 5) exercise strong oral and written communication skills including those needed for technical writing.

COURSE REQUIREMENTS

REQUIRED COURSES
ENGR 400   Seminar (1 credit)
THE REMAINING 30 CREDITS ARE ELECTIVE COURSES.
The elective courses may be chosen from the list of EE concentration areas or chosen in consultation with the graduate advisor. The course descriptions are in the Graduate Studies Division section of the Catalog.

OPTIONAL CONCENTRATION IN POWER AND RENEWABLE ENERGY

1. ELEG 418 Renewable Energy
2. ELEG 419 Fuel Cells
3. ELEG 420 Hybrid Vehicle
4. ELEG 435 Electric Machines
5. ELEG 438 Power System Analysis
6. ELEG 436 Advanced Power System Analysis
7. ELEG 440 Electric Power Distribution Systems
8. ELEG 492 Sustainable Energy Lab
9. ELEG 479 Solar Energy and Solar Cell

OPTIONAL CONCENTRATION IN ROBOTIC, AUTOMATION AND PLC

1. ELEG 464 PLC (programmable logic controls)
2. ELEG 411 Advanced PLC
3. ELEG 463 Industrial Control Lab
4. ELEG 461Controls Lab
5. ELEG 417 Controls
6. ELEG 467 Introduction to Mechatronics
7. ELEG 465 Intro to Robotics

OPTIONAL CONCENTRATION IN BIOMECHATRONICS

1. ELEG 467 Introduction to Mechatronics
2. ELEG 412: Bioelectronics
3. ELEG 413: Bioinformatics
4. ELEG 510: Medical Machine
5. ELEG 547: Bio MEMS
6. ELEG 513: Biomedical Image Processing
7. ELEG 459: Audio Signal Processing Lab
8. ELEG546 Biosignal Processing

Electrical Engineering *Master of Science Degree*

OPTIONAL CONCENTRATION IN SIGNAL PROCESSING AND COMMUNICATIONS

1.   ELEG 416 Fiber Optics Lab
2.   ELEG 443 Digital Signal Processing
3.   ELEG 543 DSP Lab
4.   ELEG 453 Pattern Recognition
5.   ELEG 546 Bio-signal Processing
6.   ELEG 450 Communications lab
7.   ELEG 430 Satellite Communications
8.   ELEG 441: RF Communication
9.   ELEG 459: Audio Signal Processing Lab
10.   ELEG 442: Digital Communications
11.   ELEG 513: Biomedical Image processing
12.   ELEG 543: Digital Signal Processing Lab

OPTIONAL CONCENTRATION IN VLSI AND INTEGRATED CIRCUITS

1.   ELEG 548: Low Power VLSI Design
2.   ELEG 458: Analog VLSI Circuit Design
3.   ELEG 480: Digital Electronics
4.   ELEG 482: Analog Integrated Circuits
5.   ELEG 403: RF VLSI
6.   ELEG 404: Digital VLSI / CPEG 348 VLSI Design
7.   ELEG 446: Introduction to MEMS
8.   ELEG-451: Intro. to Nanotechnology
9.   ELEG 549: VLSI Testing
10.   ELEG 448: Microelectronic Fabrication
11.   ELEG 447: Semiconductors

Mechanical Engineering *Master of Science Degree*

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This degree program prepares the student for a successful career through advanced study in design, development, analysis, manufacturing, and maintenance of mechanical systems for a wide range of industries, including transportation, automation, medical, energy generation, electronics, and sports. The program combines core mechanical engineering courses with technical electives that enables the student to increase his/her knowledge and competence in essential skills for Mechanical Engineering while affording sufficient freedom to provide in-depth study in both traditional and contemporary curriculum areas and explore emerging interdisciplinary areas. The department provides the flexibility to allow the student to select his/her own specialty from the technical areas below:

1. General Mechanical Engineering
2. Biomechanical Engineering
3. Design Engineering
3. Manufacturing Engineering and Management
5. Mechanics and Materials
6. Mechatronics and Automation
7. Micro and Nano Engineering
8. Aerospace Engineering
9. Thermal Fluid System and Sustainable Energy

The student can design an individualized program of study with the help and approval of his/her faculty advisor if the academic and career goals extend beyond the available technical areas.

Learning Outcomes

Students will:

1. demonstrate the ability to design or analyze a system, component or process to meet desired objectives within realistic, contemporary constraints such as health and safety, ethics, performance, sustainability and economics;
2. demonstrate the ability to use the techniques, skills, and modern engineering and scientific tools necessary for engineering practice;

3. demonstrate the ability to create, adapt, transfer and integrate existing and emerging technologies into new products, processes and services;
4. develop decision making, risk assessment and problem solving skills considering both economic and other constraints; and
5. develop both technical and management oral presentation and written communication skills.

Admission Requirements

The Master of Science degree in Mechanical Engineering is intended to prepare individuals with a strong mathematical, scientific, or technical background for entry into the Mechanical Engineering field at an advanced level and for further study leading to the doctorate. Admission to the program requires a Bachelor's degree in Mechanical Engineering or other related engineering degree. Students with superior credentials in other engineering or science programs can be accepted into the program if they have taken sufficient mathematics and physics courses, including calculus, differential equations, and two semesters of course work of general physics. Additional courses may be required to make up deficiencies in core Mechanical Engineering areas. Applicants are expected to have an average of B or better in their undergraduate coursework.

In addition, the department also offers the opportunity to acquire double graduate degrees along with the M.S. degree in Mechanical Engineering. Candidates for these double Masters degree programs are typically required to complete a total of 48 credit hours to satisfy the requirements of two Masters degrees. This implies 18 credit hours in addition to the 30 hours required for the M.S. degree in Mechanical Engineering.

Please refer to the Graduate Studies Division catalogue pages for detailed information on Double Graduate Degree programs. Furthermore, customized study plans to allow receiving the Mechanical Engineering M.S. degree while pursuing either the Ph.D. degree in Computer Science and Engineering or the Ed.D. degree in Education are available. Doctoral students in these two programs should consult their respective doctoral advisors to work on their individualized plans. Further details on the dual M.S. in Mechanical Engineering degree programs are available in the catalog section on the Graduate Studies Division.

COURSE REQUIREMENTS

A minimum of 31 semester hours is required for the MSME degree. The program combines core mechanical engineering courses with technical electives. The student is recommended to choose at least 3 electives for in-depth study in one technical area and use the rest electives for exploration in a broader technical area.

- 3 courses (9 credit hours) from the Mechanical Engineering core courses
  MEEG 410 Advanced Fluid Dynamics
  MEEG 451 Advanced Strength Analysis
  MEEG 452 Advanced Vibrations
  MEEG 453 Finite Element Methods
  MEEG 454 Advanced Dynamics
  MEEG 462 Applied Thermodynamics
  MEEG 463 Advanced Heat Transfer
- 3 courses (9 credit hours) from one technical area
- MEEG 597 Masters project (3 credit hours) or MEEG 598 Masters thesis (6 credit hours)
- 2-3 elective courses (6-9 credit hours)
- ENGR 400 Engineering Colloquium (1 credit hour)

As a general guideline, only one course outside of Mechanical Engineering is allowed toward the MSME degree. However, another out-of-department course can be taken if it is required for the chosen technical area and has the approval of both the advisor and chairman.

The following is a brief introduction of the technical areas supported by the department.

GENERAL MECHANICAL ENGINEERING

The General Mechanical Engineering area prepares students for a broad range of career choices in the field of mechanical engineering and for their further Ph.D. study.

AEROSPACE ENGINEERING

The Aerospace Engineering area focuses on the design, manufacturing, innovation, performance and safety of aircraft and spacecraft.

Mechanical Engineering *Master of Science Degree*

BIOMECHANICAL ENGINEERING

The Biomechanical Engineering area studies the application of mechanical engineering principles to the conception, design, development, analysis and operation of biomechanical systems. Coursework includes biomaterials, biotransport, biomechanics and biomedical instrument design.

DESIGN ENGINEERING

The Design Engineering area focuses on product/machinery design and application in a variety of industries, such as the design and development of green (solar) energy system, biomedical instrumentation, automobile components and systems, automation, and different products.

MANUFACTURING ENGINEERING AND MANAGEMENT

The Manufacturing Engineering and Management area provides advanced study in manufacturing. The program of study includes advanced materials and manufacturing processes, assembly and product engineering, automation in manufacturing, and manufacturing competetiveness. This prepares students with state-of-the-art knowledge, hands on experience and competency in world-class manufacturing environments. Course work emphasizes global corporate and business practices, and Manufacturing Shop Floor environments.

MECHANICS AND MATERIALS

The Mechanics and Materials area provides understanding of engineering materials and structures and their mechanical response and failure behavior with advanced theories, analysis methods, and modeling and simulation tools. It helps the student develop modeling and simulation skills needed to understand and enhance the thermo-mechanical behavior of engineering devices and systems.

MECHATRONICS AND AUTOMATION

The Mechatronics and Automation area studies the applications of mechatronics in manufacturing and other industrial automation, including sensors, microprocessors, programmable logic controllers and robotics.

MICRO AND NANO ENGINEERING

The Micro and Nano engineering area studies the micro- and nanotechnology in the mechanical systems, including the design, fabrication, packaging and modeling of microelectromechanical systems (MEMS), nano materials analysis and fabrication, fluidics, heat transfer and energy conversion at micro- and nanoscales.

THERMAL FLUID SYSTEMS AND SUSTAINABLE ENERGY

The Thermal Fluid System and Sustainable Energy area provides advanced study in thermal fluid systems and sustainable energy. Courses include heating, ventilation and air conditioning (HVAC); aerodynamics and hydrodynamics of sports and vehicles; transport phenomena (heat and mass transfer and fluid flow) in manufacturing processes and medical devices; thermal management of electronics; thermal fluids system design; solar energy applications and fuel cells.

Technology Management *Master of Science Degree*

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The Master's Program in Technology Management (TM) is designed to prepare you for the fast-moving global economy where the ability to manage advances in management, engineering, science and technology is critical to innovation, competition and success. We develop leaders adept at managing technology-dependent organizations, emerging technology-based entrepreneurial businesses, technology change and innovation, and skills in establishing and maintaining superior competitive advantages for their organizations.

The Master's program is an innovation interdisciplinary graduate program that enables you to seamlessly and easily integrate courses and concentrations offered by various departments and schools at UB. Our graduates have obtained positions in engineering, technology, management and other professional careers in a wide spectrum of industries and organizations. As an integral part of the M.S. in TM, we give you the opportunity to specialize in a number of exciting concentrations after you complete specific core courses. Thus preparing you for select highly sought after industry certifications.

The MS in Technology Management program is accredited by the International Association for Management of Technology (IAMOT).

Our school has a strong internship program which allows students to work for outside companies while completing their degree. We also have on-campus jobs both within and outside the TM department.

Learning Outcomes

The UB Technology Management Program is specifically designed to develop skills and competencies such as:

1. Identifying and evaluating the impact of relevant changing technology and managing those changes.

2. Designing programs to identify, develop and implement innovative technological based solutions.

3. Managing the effective planning and execution of those technology based initia-

tives and the integration of their results into the mainstream of an enterprises' strategy, processes and operations.

4. The application of technology to create wealth.

5. Leadership, the creation and sustenance of high-performance global teams and enabling innovation.

The Department offers, as an integral part of the Technology Management Masters Degree, the opportunity to specialize in a number of concentrations, which are inter-disciplinary and available through various departments to provide more educational and career choices and flexibility for the students:

• Global Program and Project Management

• Manufacturing Management

• Supply Chain, Logistics and Service Management

• Quality Management & Continuous Improvement

• Bio-Technology Management

• Information Technology & Analytics Management

• New Product Development, Management & Commercialization

Course Requirements

A. A total of 34 semester hours is required in an approved program of study for the M.S. in Technology Management.

B. Completion of the following core courses (18 credit hours):

TCMG	400	Marketing, Entrepreneurship and Innovation Issues & Practices in Management
TCMG	495	Technical Writing in Communications and Research in Engr & Tech Mgmt
TCMG	524	Statistical Quality Control Techniques
MGMT	555	
or MGMT 632		
or MGMT 723		Global Program & Project Management
MGMT	523	
or MGMT 723		Leadership, Teams and Managing Change
TCMG	525	Finance and Accounting for Managers

C. Completion of TCMG 595 Capstone or TCMG 597 Master's Project or TCMG 598 Master's Thesis (3 credit hours):

TCMG 595 is a Capstone/Project course designed to integrate concepts taught throughout the program and requires the development of a Business Plan as one of the course requirements.

Students may alternately complete a thesis or master's project.

D. Completion of ENGR 400 (1 credit)

E. Elective Courses (12 credit hours)

Students must take four elective courses (12 credit hours). These electives may be selected from any of the concentration areas listed above, in consultation with the program academic advisor. A list and description of the courses available in each concentration is available in the catalog section on course descriptions.

The concentration areas can be applied to satisfy the requirements of dual Masters degree programs of study.

Other Technology Management project courses:

TCMG	500	Graduate Co-Op/Internship in Technology Management (1-3 credit hours)
TCMG	597	Master's Project (3 credit hours)
TCMG	597C	Masters Project Extension (1 credit hour)
TCMG	598	Thesis in Technology Management (3-6 credit hours)
TCMG	599	Independent Study in Technology Management (3 credit hours)

As a pre-requisite for the program, all students are expected to have a demonstrated familiarity with statistical analysis. Any remedial course taken to meet this requirement will not be considered as an elective. Students are also expected to demonstrate basic computing skills.

Since July 2004, the Department of Technology Management has been offering these courses for the M.S. degree program in Technology Management through distance learning. For more information please contact the department or visit: http://www.bridgeport.edu/ub/dlearning/

Computer Science and Engineering *Ph.D. Program*

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The Ph.D. degree is a certification of critical aptitude in scholarship, imagination, knowledge in the discipline, enterprise in research, and proficiency and style in communication. A candidate obtaining a Ph.D. degree must display a thorough understanding in the major areas of computer science and engineering and must master the necessary tools and techniques so as to be able to make original contributions to the field of computer science and engineering. An equally important aspect is that of proficiency in oral and written communication skills.

The requirements of the Ph.D. program are: successful completion of preliminary examinations and courses, satisfactory performance in written comprehensive and oral examinations, admission to Ph.D. candidacy, successful completion and defense of original work documented as a dissertation, and the satisfaction of additional requirements such as teaching and seminars.

The formal degree to be offered is the Doctor of Philosophy in Computer Science and Engineering. This will be awarded to candidates who complete all the requirements of the Ph.D. degree described later in this section.

Admission Requirements

Students admitted to the Ph.D. program should have a master degree in computer science or computer engineering or a closely related discipline with at least a 3.5 GPA. A score of at least 150 is required in the verbal section, and 165 is required in the quantitative section of the GRE scores. Conditional admission to the Ph.D. program is not available.

International students with a master's degree in computer science or computer engineering are also required to have a TOEFL IBT score of at least 80 or a minimum IELTS score of 6.5.

Learning Outcomes

A graduate scholar from the Ph.D. program in the School of Engineering will: 1) use advanced mathematical proof methodologies in computer science and engineering; 2) demonstrate a robust and in-depth background in hardware and software issues in computer science and computer engineering; 3) possess a strong background in implementing software systems and/or hardware systems; 4) possess a strong background in designing diverse and integrated software/hardware systems solutions; and 5) critically analyze problems and thoroughly evaluate potential benefits of alternative solution in designing software and/or hardware systems.

Program Requirements

A. Academic Requirements:

1. Eight (3-credit hours) courses at the 500 or 600 level, in the discipline, excluding independent studies. In addition, two (3-credit hours) courses at the five-hundred or six-hundred level from the Technology Management Department are required to satisfy the Information Technology Globalization Track requirement. Only courses with at least B grade can be counted towards satisfying the course requirements.

2. A two-semester teaching practice requirement (3 credit hours each), for which students are to register with no fees. The students will be expected to teach lower undergraduate level classes, and/or assist professors as teaching assistants (i.e., perform a significant teaching role), thus giving Ph.D. graduates experience for an academic teaching career.

3. At least 15 semester hours of dissertation research, culminating in a dissertation proposal defense and dissertation defense.

4. Comprehensive examination: written and oral (proposal defense).

5. Publication of at least two journal papers, or one journal paper and two refereed conference papers, within the course of the Ph.D. topic research. These publications are not required to be single-authored by the student and they might be co-authored with members of the dissertation committee. The journals and conferences are expected to meet quality metrics established by the Department of Computer Science and Engineering.

B. Time and Load Guidelines:

Both full and part-time students are encouraged to apply for the Ph.D. degree, which should be completed within a maximum of seven calendar years. A Ph.D. student (part-time or full-time) is expected to devote the necessary time to courses and research to make satisfactory progress toward the degree. Satisfactory progress includes active participation in the research and teaching environment of the School of Engineering. The student advisor and dissertation committee should advise the student as to her/his progress in the program. Full-time students are required to register for at least 9 credit hours each semester while part-time students are required to register for at least 6 credit hours per academic year (spring and fall semesters).

C. Course Work:

A Ph.D. candidate must complete at least 30 credit hours of course work, not including the dissertation, beyond the MSc. degree. Upper level undergraduate remedial courses cannot be used to fulfill the course work requirement.

D. Course Grade Point Average:

A Ph.D. student is expected to maintain a G.P.A. of 3.0 or more. If the G.P.A. falls below 3.0, the student is automatically placed on probation. Continued probationary status for two semesters may lead to dismissal of the candidate from the program. No grade less than B is acceptable towards the course work requirement.

E. Seminar Requirement:

A Ph.D. student is expected to present her/his research findings in public seminars. S/he is also expected to interact and participate in professional discussions and meetings such as conferences and workshops. To fulfill these requirements, a Ph.D. student is expected to present one seminar before the dissertation defense. The seminar of his/her research topic for the dissertation serves as the oral (proposal defense) part of the comprehensive exam. The Ph.D. Director awards a Pass/Fail grade after consultation with the Ph.D. director student's dissertation advisor. The student is required to register for one seminar course.

F. Core Courses:

Ph.D. candidates are required to finish a set of 4 courses out of a list of 7 core courses. The Department of Computer Science and Engineering publishes a list of core courses every two years. The list is available through the Ph.D. Program Director. For the academic year, 2017 – 2018, the list of core courses include CPSC 606 Quantum Computing, CPEG 585 Computer Vision, CPEG 560 Advanced Robotics, CPSC 590 Parallel Processing, CPEG 562 Cryptography and Cryptanalysis, CPEG 547 Field Programmable Gate Arrays and CPSC 552 Data Mining.

G. Comprehensive Examination:

One of the major checkpoints in the Ph.D. program that assesses the breadth and depth of the student is the written and oral (proposal defense) comprehensive examination. Passing the Written Comprehensive Examination is granted when the student achieves at least a 3.5 GPA in the 4 core courses with at least B grade in each course.

The seminar requirement represents the oral (proposal defense) section of the exam. The outcome of this examination will be of fail or pass. A student can retake this examination no more than once. A student who does not pass the comprehensive examination in two attempts will be dismissed from the program.

H. Dissertation Committee:

After selecting a dissertation advisor, the student is required to define a problem of merit, carry out a literature search and prepare a course of action to solve the selected problem. The candidate is expected to produce a dissertation proposal. The dissertation advisor in consultation with the Ph.D. program Director, recommends a dissertation committee for the student. The dissertation committee includes at least three members in addition to the dissertation advisor. At least four members of the dissertation committee must be from a professorial rank within the school. Additionally, an external examiner is appointed as well. It is expected that the dissertation Supervisor and at least 50% of the committee membership has to be from professorial ranks of the Computer Science and Engineering Department. The external examiner is one whom has been distinguished in the field of computer science and engineering. S/he might not hold a professorial rank. Ph.D. Program Director and the Dean of the School of Engineering must then approve the dissertation committee.

I. Admission to Candidacy:

When a student passes the written comprehensive examination, s/he will be admitted to Ph.D. candidacy. This serves as another significant milestone in progress towards the Ph.D. degree.

I. Residency Requirement:

The Ph.D. program is an on-campus program that has a two years residency requirement. Residency can be demonstrated by taking on-campus classes, satisfying the teaching requirement, and attending seminars and meetings in the School of Engineering.

J. Dissertation:

The student is expected to work on the accepted topic and come up with original results. S/he has to report the results in the form of a Ph.D. dissertation. The student is encouraged to document the intermediate results in the form of technical reports. S/he is also encouraged to publish these results as they are discovered, in the international professional literature, i.e., refereed conference proceedings and journals. Proof of good work is the acceptance of the results by reputed journals. Intermediate results can also be discussed in departmental seminars. The completed dissertation must be distributed to the dissertation committee members at least two weeks before the dissertation defense. The committee will read it and certify that the dissertation is a work of substantial merit and that it can be defended. It is the responsibility of the student that the final draft of the dissertation addresses all legitimate concerns of the committee members.

K. Dissertation Defense Examination:

After having secured approval from the dissertation committee members regarding the worthiness of the dissertation, a student will proceed with a request for the dissertation defense examination. The chairman of the dissertation committee will chair the examination. The student will schedule a convenient time for a public defense. It is the responsibility of the student to find a time that is suitable to all the members of the dissertation committee, at least two weeks before the defense. At the end of the defense, the decision of the dissertation committee will be pass or fail. It is the responsibility of the dissertation advisor to see that the comments and the criticism of the audience are addressed adequately in the final version of the dissertation. Based on the recommendation of the dissertation committee, the Ph.D. Director, and the Departmental Chairman, the Dean of the School of Engineering will recommend the Ph.D. degree subject to the satisfaction of all other formal requirements.

CONCENTRATION AREAS

The following is a list of Research / Concentration Areas under the Ph.D. Program.

1. Computer architecture and VLSI and FPGA

2. Design, modeling, and simulation of embedded and integrated systems and device applications

3. Electromechanical systems prototyping and optimization

4. Robotics, automation, machine perception and sensing

5. Software engineering, Web development, and computational sciences

6. Systems and computer security and biometrics

7. Mobile communications, cloud computing, Internet of Things and networking.

SUMMARY OF MILESTONES

A summary of steps, not necessarily ordered, through which a student will proceed is as follows:

1. Admission to the Ph.D. program in computer science and engineering.

2. Completing prerequisites.

4. Completing the course work requirement for the Ph.D.

5. Passing the requirements written comprehensive examination.

6. Admission to 'Candidacy.'

7. Selection of a dissertation advisor.

8. Writing a dissertation proposal.

Computer Science and Engineering *Ph.D. Program*

9. Completion of the seminar requirement and working on the proposed research topic.

10. Formation of the dissertation committee.

11. Approval of the dissertation by the dissertation committee.

12. Successful completion of the dissertation defense.

13. Submission of the dissertation to the School of Engineering.

14. Graduation with a Ph.D. degree in Computer Science and Engineering.

Technology Management *Ph.D. Program*

Program Director: Elif Kongar
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Technology Building
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Program Overview

The Ph.D. in Technology Management (TM) is designed to meet an emerging industry and academic need by offering a quality doctoral program to both part-time and full-time students in two inter-related areas: 1) new technology venture creation (e.g. entrepreneurship and corporate venturing), and 2) select current and emerging technologies. The program will encompass an integrated multi-disciplinary technology and management approach.

The Ph.D.-TM program is specifically designed to develop interdisciplinary skills and competencies in research and management of technology-dependent enterprises, technology-based entrepreneurship and new product, service and venture creation. While the Ph.D.-TM is housed in the School of Engineering, the Ph.D. degree facilitates and encourages interdisciplinary studies across the School of Engineering and the School of Business and utilizes their complementary research facilities, faculty and lab resources.

The Ph.D. degree is a certification of critical aptitude in scholarship, creativity, knowledge in the discipline, enterprise in research, and proficiency and style in communication. A candidate obtaining a Ph.D. degree must display a thorough understanding in the major areas of Technology Management and must master the necessary tools and techniques so as to be able to make original contributions to the field of Technology Management. An equally important aspect is that of proficiency in oral and written communication skills.

The requirements of the Ph.D. program are: successful completion of preliminary examinations and courses, satisfactory performance in the written comprehensive and oral (proposal defense) examinations, admission to Ph.D. candidacy, successful completion and defense of original work documented as a dissertation, and the satisfaction of additional requirements such as teaching courses, seminars and publications.

The formal degree to be offered is the Doctor of Philosophy in Technology Management.

This will be awarded to candidates who complete all the requirements of the Ph.D. degree described later in this section.

Ph.D. in Technology Management Program-Level Learning Objectives

The Ph.D. in Technology Management Program goals are in line with the mission statement of the School of Engineering of the University of Bridgeport. In this regard, the Ph.D. program is designed to provide comprehensive education and research opportunities to a diverse student population consisting of highly qualified and competent students, scholars, industry professionals and researchers in engineering, sciences, and the application and management of technology. The program aims at preparing these highly credentialed individuals for leadership and technology positions in industry, government, and academia with significant contribution to the profession and community locally, nationally, and globally. The program offers an application oriented interdisciplinary curricula to provide a distinctive education in fundamental and emerging disciplines through its faculty and institutional partners while ensuring that the graduates possess creative, innovative, and analytical skills with a strong commitment to research and technical excellence, ethical conduct, and cultural, societal, and global well-being.

PROGRAM GOALS:

- To prepare highly qualified and competent Ph.D. level scholars, industry professionals and researchers in the advance and interdisciplinary field of Technology Management.

- To prepare Ph.D. level scholars, industry professionals and researchers who are able to conduct research and develop strategies and plans to identify, develop and implement innovative technological based solutions while championing and sustaining innovation initiatives and environments.

- To prepare Ph.D. level scholars, industry professionals and researchers who are able to manage the effective planning and execution of those technology based initiatives and the integration of their impact into the mainstream of an enterprises'

strategy, processes and operations.

- To prepare Ph.D. level scholars, industry professionals and researchers who are able to manage the application of technology to create wealth and economic development as in successful entrepreneurship and/or intrapreneurship or corporate venturing initiatives.

- To develop future leader and managers in technology or technology dependent organizations that are able to lead and motivate high-performance and diversified global teams.

OUTCOMES ASSESSMENT:

There are two types of outcomes that need to be monitored: Institutional Outcomes and Student Outcomes.

STUDENT OUTCOMES:

Familiarity with principles of new venture creation, entrepreneurship, corporate venturing, innovation, and related issues including management, finance, legal issues, new product development, and product commercialization.

Familiarity with advanced concepts of methodologies in technology management.

Possessing a strong background in one or more engineering and technology area offered in the Ph.D. program.

Possessing a strong background in implementing new technology based businesses and ventures.

Being able to critically analyze problems and evaluate the benefits of alternative solutions in new technology-based international opportunities and corporate ventures.

Being able to work in a development team to address specific issues and problems.

Being able to interact and communicate both verbally and in writing with people whose expertise is in different domains and who are located across the globe.

Being able to effectively teach in a higher education institution.

Being able to write quality research papers for inclusion in prominent journals, and research proposals for submission to funding agencies.

Being prepared to become a future leader, professional, academic and researcher with interdisciplinary skills, to join the faculty of leading academic institutions or take high

level research, consulting and management positions in industry, non-profit organizations, government or start their own ventures.

Admission Requirements

The Ph.D. in Technology Management program is an advanced level program. Students are expected to demonstrate an understanding of fundamental concepts in management and technology gained through appropriate undergraduate and graduate (master) education. Students who are accepted into the Ph.D. program but lack some of those fundamental concepts will be required to remedy their deficiencies through completing satisfactory undergraduate or graduate courses (without graduate credit).

Students admitted to the Ph.D. program should have a business or management degree as well as an engineering, computer science or technology degree. To be more specific, a student should have either an (1) undergraduate Engineering or Technology (STEM* category) and an MBA or MS in Technology Management or Engineering Management or Management of Technology or equivalent degree; or (2) an undergraduate Business or Management or TM or MOT or equivalent and a Master's degree in Engineering, Technology or STEM category, with at least a 3.3 GPA. Three+ years of industry experience or equivalent is desired. Students admitted from non-English speaking countries, having a Masters degree in engineering and an undergraduate in business or vice-versa will also be required to have a TOEFL score of at least 550 or equivalent (IBT = 80, IELTS = 6.5). The GRE exam is required for admission. Students with an undergraduate and graduate degree in engineering or a STEM category, with three or more years of business experience, may also be accepted into the Ph.D. program. The applicant must submit two letters of reference and a personal statement (containing such information as background; experience, motivation for pursuing the Ph.D. in TM areas and suggested topics for potential dissertation research, etc.)

Interested students in the Ph.D. program without a master's degree must apply and may be admitted into a master's program first, and then upon satisfactorily completing the master's degree, they would be eligible to apply for the Ph.D. program. This route assumes an appropriate Bachelor's degree (see above).

*STEM = Science, Technology, Engineering or Math; MOT= Management of Technology.

Please refer to both the General Admissions Information and the Ph.D. TM for detailed requirements. (http://www.bridgeport.edu/admissions and http://www.bridgeport.edu/PhD-TM)

Academic Requirements

The requirements for Ph.D. in TM students include the following:

The Ph.D. in TM is an interdisciplinary degree for which all Ph.D. students must take a common core of five (5) required courses and choose from elective courses from Area 1 (New Technology Venture Creation) and Area 2 (Current and Emerging Technologies – Technology Specializations). Each student can choose elective courses from three study options (see below and Appendix 1). A list and short description of core and elective courses by specialization is provided in Appendix 2.

- Focus on Area 1 – New Technology Venture Creation (e.g. Entrepreneurship and Corporate Venturing): Number of courses to be taken in Area 1 is three courses each from Area 1 and two courses each from Area 2 (in one of the Technology Specializations).

- Focus on Area 2 – Current and Emerging Technologies – (Technology Specializations) Number of courses to be taken in Area 2 is four from Area 2 from one of the following Technology Specialization areas and one from Area 1. The Technology Specialization areas focus on one of the following:

  Bio-Tech and Bio-Medical Technology, Systems and Processes

  Information Analytics, Technology and Decision Support Systems

  Manufacturing, Supply Chain and Logistics Technology, Systems and Processes

- Combination of Areas 1 and 2 – Number of courses to be taken is two each from Area 1 and three each from Area 2. In Area 2, the students must pick courses from one Technology Specialization area for depth coverage.

TIME AND LOAD GUIDELINES

The program will admit both full and part-time students. For all students, the program must be completed within a maximum of seven calendar years. If a student requires more than seven years, he/she must file a letter of appeal requesting a time extension to the Dean of the SOE and the Ph.D. program coordinator. A Ph.D. student (part-time or full-time) is expected to devote the necessary time to courses and research in order to make satisfactory progress toward the degree. Satisfactory progress includes active personal participation in the research and teaching environment of the School of Engineering. The student advisor and dissertation committee should advise the student as to his/her progress in the program. Full time students are required to register for at least nine credit hours each semester while part-time students are required to register for at least six credit hours per academic year (spring and fall semesters).

TIME LIMITS

All requirements for the doctoral degree must be completed within the seven-year period (accumulating to 21 Fall, Spring, and Summer semesters) following admission to the doctoral program.

TIME LIMIT EXTENSION REQUEST

Under compelling circumstances beyond the student's control, a student may petition for a one-semester extension of the seven-year time limit. If the one-semester extension is recommended by the Ph.D. in Technology Management Program Director and approved by the Dean, the student has one additional semester to complete work on the dissertation. If the student fails to complete all degree requirements within the time for the student's doctoral program or within a one-semester extension approved as noted above, the student will be dismissed from the doctoral program. To complete the doctoral degree, the student must reapply for admission. Policies do not provide the option to revalidate courses completed more than six years prior to the date of admission. A readmitted student therefore would be able to apply to the new admission only those courses approved by the department and Graduate School and complete within the prior six years (accumulating to 18 Fall, Spring, and Summer semesters).

Technology Management *Ph.D. Program*

COURSE WORK

A Ph.D. candidate must complete at least 30 credit hours of course work, not including the dissertation, beyond the Masters degree. Upper level undergraduate remedial courses cannot be used to fulfill the coursework requirement. The Ph.D. dissertation will require a minimum of 15 credit hours to complete.

Courses must be selected as follows:

Five Core Courses of three credit hours each.

Additional five (three credit hours each) courses in specific areas**

A one-semester teaching practicum requirement (no credit hours).

COURSE GRADE POINT AVERAGE

A Ph.D. student is expected to maintain a G.P.A. of 3.0. If the cumulative G.P.A. falls below 3.0, the student is automatically placed on probation. (Note:grades for transferred courses are not included in the calculation of the University of Bridgeport GPA). Continued probationary status for two semesters will lead to dismissal of the student from the program.

*Students admitted to the Ph.D. program should have a business or management degree as well as an engineering, computer science or technology degree. To be more specific, a student should have either: (1) An undergraduate Engineering or Technology (STEM = Science, Technology, Engineering and Mathematics category) degree and an MBA or MS in Technology Management or Engineering Management or Management of Technology (MOT) or equivalent graduate degree; or (2) an undergraduate Business or Management or TM or MOT or equivalent degree and a Master's degree in Engineering, Technology or STEM.

** Area 1 – New Technology Venture Creation and Area 2 – Select Current & Emerging Technologies (see Ph.D. Program Structure for additional requirements and areas) No grade less than C is acceptable towards course work requirements.

PH.D. PROGRAM DIRECTOR

The Dean of the School of Engineering will appoint a director for the doctoral program. The director supervises the implementation of the Ph.D. program. S/he is responsible for coordinating administrative functions related to the Ph.D. program including admission,

marketing, appointment of advisors, and formation of dissertation committees, for each doctoral student. In addition, the director is charged with preparing and administering the preliminary and the comprehensive examinations. The director is also responsible for recommending courses for students who may not have the proper prerequisites for certain courses.

ADVISOR

Each Ph.D. candidate, in her/his first semester, will be assigned a program advisor by the Ph.D. program director. The advisor will develop a program of study for the student and monitor his/her progress until a dissertation committee is formed for the student. A dissertation advisor will be appointed for each student after he/she passes the comprehensive exams and perform all subsequent advising. The program advisor and dissertation advisor may be the same person or two different people. A student is required to form a dissertation committee in conjunction with the Ph.D. program director after finishing the core Ph.D. courses (and passing the candidacy examinations), so that a better understanding of the various topics and research interests in the department will, by then, have been achieved.

COMPREHENSIVE EXAMINATION

One of the major checkpoints in the Ph.D. program that assesses the breadth and depth of the student's academic accomplishment and progress is the candidacy examinations and oral dissertation proposal defense examination. The candidacy examinations will test the breadth and depth of knowledge in all aspects of Technology Management related to the body of knowledge required for the Ph.D. in Technology Management, including but not limited to, the core curriculum courses, and the courses in Areas 1 and 2. The candidacy examinations should be taken at the completion of all course work.

The Ph.D. Program Director will organize these candidacy examinations, which will be developed and graded by faculty. The outcome of this examination will be a fail or pass. A student can sit for this examination twice. A student who does not pass the candidacy examinations in two attempts will be dismissed from the program. A student may submit an appeal regarding the potential dismissal from the program.

DISSERTATION COMMITTEE AND ORAL DEFENSE OF PROPOSED DISSERTATION TOPIC IN A PUBLIC SEMINAR

After passing the required examinations and selecting a dissertation advisor (or having an advisor appointed), a student is required to define a problem of merit, carry out a literature search and prepare a course of action to solve the selected problem. The candidate is expected to produce a dissertation proposal, which must be orally defended in a public seminar. The Ph.D. director awards a Pass/Fail grade after consultation with the student's dissertation advisor and committee.

The Ph.D. Program Director, in consultation with the dissertation advisor, recommends a dissertation committee for the student. The dissertation committee contains at least three members in addition to the dissertation advisor. At least four members of the dissertation committee must be from a professorial rank within the School of Engineering and/or other schools. Additionally, an external examiner is appointed as well. The external examiner is one who is distinguished in the field of Technology Management. The Ph.D. Program Director and the Dean of the School of Engineering must approve the dissertation committee.

ADMISSION TO CANDIDACY

Every student enrolled in the Ph.D. in Technology Management degree program must take a candidacy examination administered by the program director and the graduate faculty. The candidacy exam aims at assessing the capability of the student conducting doctoral research based on evidence of critical thinking, problem solving, conducting original research and other measures viewed as essential functions of a successful doctoral student. When a student passes the candidacy examination and fulfills all other requirements, s/he will be admitted to Ph.D. candidacy.

PH.D. DISSERTATION

The student is expected to work on the accepted topic and original results. S/he must report the results in the form of a Ph.D. dissertation. The student is encouraged to document the intermediate results in the form of technical reports. S/he is also encouraged to publish these results as they are discovered,

Technology Management *Ph.D. Program*

in international professional literature, i.e. refereed conference proceedings and journals. Intermediate results can also be discussed in departmental seminars. The completed dissertation must be distributed to the dissertation committee members at least two weeks before the dissertation defense. The committee will read it and certify that the dissertation is a work of substantial merit and that it can be defended.

It is the responsibility of the student that the final draft of the dissertation addresses all legitimate concerns of the committee members.

DISSERTATION DEFENSE EXAMINATION

After securing approval from the dissertation committee members regarding the worthiness of the dissertation, a student will proceed with a request for the dissertation defense examination. The chair of the dissertation committee will chair the examination. The student will schedule a convenient time for a public defense. It is the responsibility of the student to find a time that is suitable to all the members of the dissertation committee, at least two weeks prior to the defense. At the end of the defense, the decision of the dissertation committee will be pass or fail. It is the responsibility of the dissertation advisor to see that the comments and the criticism of the audience are addressed adequately in the final version of the dissertation. Based on the recommendation of the dissertation committee, the Ph.D. in Technology Management Director and the Dean of the School of Engineering will recommend the Ph.D. degree, subject to the satisfaction of all other formal requirements.

SUMMARY OF MILESTONES

A summary of steps, not necessarily ordered, through which a student will proceed, is as follows:

- Admission to the Ph.D. program of Technology Management;
- Completing prerequisites, if needed;
- Completing the course work requirement for the Ph.D.;
- Passing the written comprehensive examination;
- Admission to 'Candidacy';
- Selection of a dissertation advisor;

- Writing a dissertation proposal and its oral defense;
- Formation of the dissertation committee;
- Approval of the dissertation by the dissertation committee;
- Successful completion of the dissertation defense;
- Submission of completed and approved dissertation to the School of Engineering;
- Graduation with a Ph.D. degree in Technology Management.

Course Requirements

CORE COURSES

- Exploration in Research Methodologies (TMPD 702)
- Research Design, Analysis and Measurement (TMPD 704)
- Quantitative Methodologies (TMPD 706)
- Technology New Venture Creation (TCMG 645)
- Strategic Management of Technology & Innovation (TCMG 620)
- Comprehensive Written Exams – Both Areas 1 & 2 (TMPD 694)
- Oral Defense of Dissertation Proposal (TMPD 699)
- One semester teaching practice requirement (TMPD 698)
- Completion of one published refereed Journal Paper or 2 refereed Conference Papers (No Credit)
- Ph.D. Dissertation (TMPD 710) (Minimum of 15 Credits)

NEW TECHNOLOGY VENTURE CREATION

Select Elective Course Example

- Leadership, Teams & Managing Change
- New Product Development & Commercialization
- Small Business and Entrepreneurship
- Intellectual Property Management
- Project Management

SELECT CURRENT & EMERGING TECHNOLOGIES (TECHNOLOGY SPECIALIZATION)

- Biotech & Biomedical Technology, Systems & Processes**
- Environmental and Energy Technology, Systems and Processes

- Engineering Economics and Financial Engineering
- Information Analytics, Technology & Decision Support Systems **
- Manufacturing, Supply Chain and Logistics Technology, Systems and Processes**

   (** Initial Technology Specializations to be offered at program start)

Summary & Short Course Descriptions

CORE COURSES FOR PH.D. TM STUDENTS

Number	Name	Credit Hours
TMPD 702	Exploration in Research Methodologies	3
TMPD 704	Research, Design, Data Analysis and Measurement	3
TMPD 706	Quantitative Methodologies	3
TCMG 620x	Strategic Management of Technology and Innovation (Proposed new course)	3
TCMG 645	Technology New Venture Creation	3
TMPD 694	Written Comprehensive Examinations	0
TMPD 698	Teaching Practicum	0
TMPD 699	Seminar (Oral Defense of Dissertation Proposal)	0
TMPD 710	Ph.D. Dissertation	Min. 15

ELECTIVE COURSES THAT CAN BE TAKEN BY PH.D. OR MS STUDENTS:

AREA 1: NEW TECHNOLOGY VENTURE CREATION

Number	Name	Credit Hours
TCMG 505 or MGMT 555	Global Program and Project Management	3
TCMG 506	Advanced Program and Project Management	3
TCMG 508 or MGMT 565	Foundations of Product Management	3
TCMG 512 or MGMT 590	Intellectual Property Management	3
TCMG 523 / MGMT 523	Leadership, Teams & Managing Change	3
TCMG 525	Finance and Accounting for Managers	3
TCMG 580x / MGMT 585x	New Product Commercialization	3
TCMG 595	Global Business/ Technology Capstone	3
TCMG 532 / MKTG 560	Global Market Management	3
TCMG or MGMT 582	Small Business and Entrepreneurship	3
TCMG 559 or MGMT 560	Foundation of Business Process and Operations / Management	3

Other courses to be approved by Advisor & Program Director

Technology Management *Ph.D. Program*

AREA 2 : BIO-TECHNOLOGY AND BIO-MEDICAL TECHNOLOGY, SYSTEMS AND PROCESSES

Number	Name	Credit Hours
BMEG/MEEG 508	Biomechanics	3
BMEG/ELEG 510	Medical Machines	3
BMEG/ELEG 513	Biomedical Image Processing	3
BMEG/TCMG 535	Foundations of Bio Tech Sciences and Management	3
BMEG/ELEG 547	Bio MEMS	3
BMEG/TCMG 555X	Biotechnology and Entrepreneurship	3
BMEG/ELEG 562	Nanofabrication with Soft Materials	3
BMEG/MEEG 563	Polymer Nanocomposites	3
BMEG 565	Biomedical Materials and Engineering	3
BMEG/MEEG 567X	Physiological Fluid Dynamics	3
BMEG 580	Tissue Engineering	3
CPSC 551	Advanced Database Design	3

Other courses to be approved by Advisor & Program Director

AREA 2 : INFORMATION ANALYTICS, TECHNOLOGY AND DECISION SUPPORT SYSTEMS

Number	Name	Credit Hours
CPSC 546	Services Oriented Architecture	3
CPSC 551	Advanced Database Design	3
CPSC 556	Data Mining	3
CPSC 555	Web-based Application Development	3
CPSC 562	Information Assurance (Security)	3
CPSC/CPEG 571	Internet Computing	3
TCMG 520	Information Systems Development and Design	3
TCMG 533	Information Technology Strategy and Governance	3
TCMG/MEEG 540	Simulation and Modeling	3
TCMG 521 or ITKM 505	Information Systems and Knowledge Management	3
TCMG/CPSC 568X	Foundation of Information Analytics	3
TCMG 571 or MGMT 571	Foundations of Service Management Engineering	3
TCMG 549 or MGMT 548	Business Intelligence and Decision Support Systems	3

Other courses to be approved by Advisor & Program Director

AREA 2 : MANUFACTURING, SUPPLY CHAIN AND LOGISTICS TECHNOLOGY, SYSTEMS AND PROCESSES

Number	Name	Credit Hours
TCMG 524	Statistical Quality Control Techniques	3
TCMG/MEEG 530	Foundations of Manufacturing Management	3
TCMG 534 or MGMT 534	Strategic Sourcing and Vendor Management	3
MEEG 512x	Computational Fluid Dynamics	3
MEEG/ BMEG 567X	Physiological Fluid Dynamics	3
TCMG/ MEEG 572	Production Technology and Techniques	3
MEEG/TCMG 573 or MKTG 565	Supply Chain Management	3
MEEG/ TCMG 574	Principles of Logistics	3
MEEG 575	Manufacturing Strategy	3
MEEG/TCMG 577X	Lean Manufacturing	3
TCMG 578X	Six Sigma	3
TCMG 559 or MGMT 560	Foundation of Business Process and Operations Management	3

Other courses to be approved by Advisor & Program Director

COLLEGE OF ENGINEERING, BUSINESS, AND EDUCATION

Ernest C. Trefz School of Business Programs

Accounting *Bachelor of Science Degree*

Chair, Undergraduate Programs:
Dr. James K. Page
Mandeville Hall: 22
Telephone: (203) 576-6533
Fax: (203) 576-4388
E-mail: japage@bridgeport.edu

Curriculum and Program Requirements

The accounting curriculum provides an opportunity for students with varied interests to obtain a broad-based understanding of the role of accounting in the measurement and communication of financial and economic data. A number of interdisciplinary courses have been designed for those students wishing a maximum overview of multinational issues in accounting and taxation as well as for those students who intend to pursue more advanced studies in accounting. Accounting students who expect to take the Certified Public Accountant professional examinations should select elective courses with the approval of and in consultation with the Chair of the Accounting Department.

Learning Outcomes

LEARNING OBJECTIVES

- Acquire the knowledge necessary for the understanding of business data
- Develop the technical skills necessary to measure, analyze, and interpret economic data
- Learn how to effectively communicate economic data
- Acquire the accounting foundation that enables them to pursue advanced study required for the successful completion of the CPA exam

ASSESSMENT

Students are evaluated with exams, homework assignments, and oral presentations. Students will be evaluated and benchmarked with a standardized accounting test. This will ensure their preparation for graduate study towards the CPA exam. Students' accounting knowledge and skills also will be tested with a program specific exam when they begin and finish their accounting program.

Students must earn a grade of "C" or higher in each Accounting major course.

Summary of Requirements

CREDITS

General Education Requirements		33
Business Program Requirements		60
Accounting Electives		18
Free Electives		9
		120

Eng	C101	Composition and Rhetoric	3
Math	105	Intermediate Algebra	3
Sci		Natural Sciences Core	6
		Humanities Core	6
		Fine Arts Core	3
Caps	390	Capstone Seminar	3
Sosc		Social Sciences Core	6
			30

PROGRAM REQUIREMENTS

Acct	101	Principles of Accounting I	3
Acct	103	Managerial/Cost Accounting	3
Acct	300	Intermediate Accounting I	3
Acct	301	Intermediate Accounting Ii	3
Blaw	251	Business Law I	3
Buad	101	Introduction to Business	3
Buad	102	Business Communications	3
Buad	382	Senior Project/Internship 3	3
Cais	101	Statistics	3
Cais	191	Computer Concepts	3
Cais	201	Introduction to Business Analytics	3
Econ	201	Principles of Economics - Macro	3
Econ	202	Principles of Economics - Micro	3
Engl	202	Advanced Composition (For Business)	3
Fin	209	Managerial Finance	3
Mgmt	200	Workforce Dynamics	3
Mgmt	301	Operations Management	3
Mgmt	320	Business Planning	3
Mgmt	350	Business Policy and Strategy	3
Mktg	205	Principles of Marketing	3
			60

ACCOUNTING ELECTIVES

Acct	210	Financial Accounting Systems	3
Acct	302	Advanced Accounting	3
Acct	311	Taxation of Individuals	3
Acct	312	Taxation of Entities	3
Acct	327	Multinational Accounting	3
Acct	335	Auditing	3
			18

FREE ELECTIVES

May be selected from any University courses with the permission of the advisor.

Free Electives		9
		9

GENERAL EDUCATION REQUIREMENTS

ENG	101	Composition and Rhetoric	3
FYS	101	First Year Seminar	3
MATH	105	Intermediate Algebra	3
SCI		Natural Sciences Core	6
HUM		Humanities Core	6
FA		Fine Arts Core	3
CAPS 390		Capstone Seminar	3
SOSC	Social Sciences Core		6
			33

Total Semester Hours _____ **120**

Suggested Program

FIRST SEMESTER

BUAD	101	Introduction to Business	3
ENGL	101	Composition & Rhetoric	3
MATH	105	Intermediate Algebra	3
FYS	101	First Year Seminar	3
		Fine Arts	3

SECOND SEMESTER

ACCT	101	Principles of Accounting I	3
ENGL	202	Advanced Composition (For Business)	3
CAIS	191	Computer Concepts	3
SCI		Natural Sciences Core	3
BUAD	102	Business Communications	3

THIRD SEMESTER

MGMT	200	Work Force Dynamics	3
ECON	202	Principles of Econ - Micro	3
SOSC		Social Science Core	3
SCI		Natural Science Core	3
ACCT 103		Managerial Accounting	3

FOURTH SEMESTER

ECON	201	Principles of Econ - Macro	3
CAIS	101	Statistics	3
MKTG	205	Principles of Marketing	3
FIN	209	Managerial Finance	3
SOSC		Social Science Core	3

FIFTH SEMESTER

		Major Elective	3
MGMT	301	Operations Management	3
HUM		Humanities Core	3
		Free Elective	6

SIXTH SEMESTER

BLAW	251	Business Law I	3
CAIS	201	Introduction to Business Analytics	3
MGMT 320		Business Planning	3
HUM		Humanities Core	3
		Free Elective	3

Accounting *Bachelor of Science Degree*

SEVENTH SEMESTER _____

BUAD	382	Senior Project/Internship	3
		Major Elective	9
		Free Elective	3

EIGHTH SEMESTER _____

MGMT	350	Business Policy and Strategy	3
CAPS	390	Capstone Seminar	3
		Major Electives	6
		Free Elective	3

Total Semester Hours _____**120**

INTERNSHIP/CO-OP

Students are encouraged to pursue additional co-op experience as described on page 35 using the BUAD-200 course up to three times (one credit each). These credits will be used as part of the student's degree program.

Business Administration *Associate in Arts Degree*

Assistant Dean-Student Services:
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Curriculum and Program Requirements

The Associate in Arts in Business Administration provides options for students who want only two years of college study and students who are not certain about their degree objectives.

This degree program requires that all freshman and sophomore core business courses and business prerequisites, as well as University core requirements, be completed with an average grade of "C" or better.

Two-year business study at the University of Bridgeport provides many advantages not usually available to community college or two-year college students.

All the resources of the university are available to two-year students. This includes planning/placement services and all of the social, sports and extracurricular activities of the campus.

Students receive all the guidance and advising of a small, private two-year college, while completing their studies in the environment of a major university.

Learning Outcomes

LEARNING OBJECTIVES

Students 1) acquire basic general business knowledge; 2) develop practical technical skills necessary for initially pursuing a junior level entry position; 3) learn how to communicate with others in their organization; and 4) understand the role of business in the larger society.

ASSESSMENT

Students will be evaluated with a program specific exam related to the basic business courses at the beginning and end of their two-years of undergraduate study. Students are evaluated by course level exams, assignments, projects and oral presentations.

Summary of Requirements

CREDITS

General Education Requirements	33
Program Requirements	27
	60

PROGRAM REQUIREMENTS

ACCT	101	Principles of Accounting I	3
ACCT	102	Principles of Accounting II	3
CAIS	101	Statistics	3
CAIS	102	Applied Statistics	3
CAIS	191	Computer Concepts	3
LAW	251	Business Law I	3
MGMT	302	Multicultural Management	3
		Free Electives	6
			27

GENERAL EDUCATION REQUIREMENTS

ECON	201	Principles of Economics - Macro	3
ECON	202	Principles of Economics - Micro	3
ENGL	C101	Composition and Rhetoric	3
ENGL	202	Advanced Composition	3
FA		Fine Arts Core	3
FYS	101	First Year Seminar	3
MATH	C105	Intermediate Algebra	3
SCI		Natural Sciences Core	6
SOSC		Social Sciences Core	6
			33

Total Semester Hours _____ **60**

Suggested Program

FIRST SEMESTER

ACCT	101	Principles of Accounting I	3
CAIS	191	Computer Concepts	3
ENGL	C101	Composition and Rhetoric	3
FYS	101	First Year Seminar	3
MATH	C105	Intermediate Algebra	3

SECOND SEMESTER

ACCT	102	Principles of Accounting II	3
CAIS	101	Statistics	3
ENGL	202	Advanced Composition	3
SCI		Natural Science Core	3
		Free Elective	3

THIRD SEMESTER

CAIS	102	Applied Statistics	3
ECON	201	Principles of Economics - Macro	3
FA		Fine Arts Core	3
LAW	251	Business Law I	3
SOSC		Social Sciences Core	3

FOURTH SEMESTER

ECON	202	Principles of Economics - Micro	3
MGMT	302	Multicultural Management	3
SCI		Natural Science Core	3
SOSC		Social Science Core	3
		Free Elective	3

Total Semester Hours _____ **60**

INTERNSHIP/CO-OP

Students are encouraged to pursue additional co-op experience as described on page 35 using the BUAD-200 course up to three times (one credit each). These credits will be used as part of the student's degree program.

Business Administration *Bachelor of Science Degree*

Assistant Dean-Student Services:
Dr. Timothy Raynor
Mandeville Hall: 22
Telephone: (203) 576-4687
Fax: (203) 576-4388
E-mail: traynor@bridgeport.edu

Curriculum and Program Requirements

The Business Administration major provides the maximum flexibility in course selection for a student to fulfill both personal and professional goals. Upon completion of University and College core requirements the student may pursue a myriad of unique combinations of study to satisfy either a general or specific purpose. This includes combining study from two or three of the major disciplines of study within the college including those disciplines not listed in this catalog such as Economics and Management Information Systems, and combinations with other colleges at the University. In all cases the student's study program must be approved by the student's faculty advisor.

Students interested in adding a Teacher Certification to a program in Business Administration can do so. A brief description of the teacher certification requirements appears elsewhere in this catalog under the School of Education section.

The Bachelor of Science degree in Business Administration permits a student, upon completion of the core business requirements and prerequisites applicable to all business degrees, to create a unique combination of courses in business or other academic disciplines.

All business courses listed under other majors as well as courses in other academic disciplines such as political economy, psychology or sociology, may be chosen as elements of this major.

Learning Outcomes

LEARNING OBJECTIVES

Students 1) acquire basic general business knowledge; 2) integrate knowledge across the business disciplines; 3) learn how to communicate with others in their organization; and 4) acquire in-depth knowledge and skills related to a particular discipline and career path.

ASSESSMENT

Students will be evaluated with a program specific exam related to the basic business courses at the beginning and end of their undergraduate study. Students are evaluated by course level exams, assignments, projects and oral presentations.

Summary of Requirements

CREDITS

General Education Requirements	33
Business Administration Program Requirements	72
Free Electives	15
	120

PROGRAM REQUIREMENTS

ACCT	101	Principles of Accounting I	3
ACCT	103	Managerial/Cost Accounting	3
BLAW	251	Business Law I	3
BUAD	101	Introduction to Business	3
BUAD	102	Business Communications	3
BUAD	382	Senior Project/Internship	3
CAIS	101	Statistics	3
CAIS	191	Computer Concepts	3
CAIS	201	Introduction to CAIS	3
ECON	201	Principles of Economics- Macro	3
ECON	202	Principles of Economics - Micro	3
ENGL	202	Advanced Composition (for Business)	3
FIN	209	Managerial Finance	3
MGMT	200	Work Force Dynamics	3
MGMT	301	Operations Management	3
MGMT	320	Business Planning	3
MGMT	350	Business Policy and Strategy	3
MKTG	205	Principles of Marketing	3
		Business Electives*	18
			72

GENERAL EDUCATION REQUIREMENTS

ENGL	101	Composition and Rhetoric	3
FYS	101	First Year Seminar	3
MATH	C105	Intermediate Algebra	3
SCI		Natural Sciences Core	6
HUM		Humanities Core	6
FA		Fine Arts Core	3
CAPS	390	Capstone Seminar	3
SOSC		Social Sciences Core	6
			33

FREE ELECTIVES

May be selected from any University courses with the permission of the advisor.

Free Electives	15
	15

Total Semester Hours **120**

*The 12 credits (4 courses) of business electives may be selected from Accounting, Economics, Finance, International Business, Management and Industrial Relations, and Marketing.

Students must earn a grade of "C" or higher in each of the four business electives.

Free electives (15 credits) may be selected from any University courses with the permission of the advisor.

*Specific course requirements are described under each major description or course description section of this catalog.

Suggested Program

FIRST SEMESTER

BUAD	101	Introduction to Business	3
ENGL	101	Composition & Rhetoric	3
MATH	C105	Intermediate Algebra	3
FYS	101	First Year Seminar	3
		Fine Arts	3

SECOND SEMESTER

ACCT	101	Principles of Accounting I	3
ENGL	202	Advanced Composition (for Business)	3
CAIS	191	Computer Concepts	3
SCI		Natural Sciences Core	3
BUAD	102	Business Communications	3

THIRD SEMESTER

MGMT	200	Work Force Dynamics	3
ECON	202	Principles of Economics – Micro	3
SOSC		Social Science Core	3
SCI		Natural Science Core	3
ACCT	103	Managerial Accounting	3

FOURTH SEMESTER

ECON	201	Principles of Economics – Macro	3
CAIS	101	Statistics	3
MKTG	205	Principles of Marketing	3
FIN	209	Managerial Finance	3
SOSC		Social Science Core	3

FIFTH SEMESTER

		Major Elective	3
MGMT	301	Operations Management	3
HUM		Humanities Core	3
		Free Elective	6

SIXTH SEMESTER

BLAW	251	Business Law I	3
CAIS	201	Introduction to CAIS	3
MGMT	320	Business Planning	3
HUM		Humanities Core	3
		Free Elective	3

Business Administration *Bachelor of Science Degree*

SEVENTH SEMESTER _____

BUAD 382	Senior Project/Internship	3
	Major Elective	9
	Free Elective	3

EIGHTH SEMESTER _____

MGMT 350	Business Policy and Strategy	3
CAPS 390	Capstone Seminar	3
	Major Electives	6
	Free Elective	3
Total Semester Hours _____		**120**

INTERNSHIP/CO-OP

Students are encouraged to pursue additional co-op experience as described on page 35 using the BUAD-200 course up to three times (one credit each). These credits will be used as part of the student's degree program.

Finance *Bachelor of Science Degree*

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Fax: (203) 576-4388
E-mail: jpage@bridgeport.edu

Curriculum and Program Requirements

The Bachelor of Science in Finance provides an integrated view of the theoretical and practical aspects of finance for those who are preparing for careers in financial management, financial institutions, financial markets, law, government service, and related fields.

Essential skills in problem-solving are developed with an emphasis on wealth maximization. Financial problems are viewed from both their micro-financial and macro-financial aspects.

The Finance major includes the subject areas of corporate financial management, banking, and investments. The program provides an integrated view of the theoretical and practical aspects of Finance for those who are preparing for careers in financial management, financial institutions, financial markets, law, government service, and related fields.

Learning Outcomes

LEARNING OBJECTIVES

- Learn financial concepts that provide the basis for careers in finance
- Develop the technical and analytical skills necessary for financial analysis
- Learn how to effectively communicate financial information
- Understand the role of finance in an organization's pursuit of its goals

ASSESSMENT

Financial concepts and technical and analytical skills are evaluated with exams, assignments, papers, cases, and projects. Students will be evaluated with a standardized finance test. Students' financial knowledge and skills also will be tested when they begin and finish the Finance program with a program specific exam.

Summary of Requirements

CREDITS

General Education Requirements	33
Finance Program Requirements	72
Free Electives	15
	120

FINANCE (B.S.)

GENERAL EDUCATION REQUIREMENTS

ENG	C101	Composition and Rhetoric	3
MATH	105	Intermediate Algebra	3
SCI		Natural Sciences Core	6
HUM		Humanities Core	6
FA		Fine Arts Core	3
CAPS	390	Capstone Seminar	3
SOSC		Social Sciences Core	6
			30

PROGRAM REQUIREMENTS

ACCT	101	Principles of Accounting I	3
ACCT	103	Managerial/Cost Accounting	3
BLAW	251	Business Law I	3
BUAD	101	Introduction to Business	3
BUAD	102	Business Communications	3
BUAD	382	Senior Project/Internship 3	3
CAIS	101	Statistics	3
CAIS	191	Computer Concepts	3
CAIS	201	Introduction to Business Analytics	3
ECON	201	Principles of Economics - Macro	3
ECON	202	Principles of Economics - Micro	3
ENGL	202	Advanced Composition (for Business)	3
FIN	209	Managerial Finance	3
MGMT	200	Work Force Dynamics	3
MGMT	301	Operations Management	3
MGMT	320	Business Planning	3
MGMT	350	Business Policy and Strategy	3
MKTG	205	Principles of Marketing	3
			54

FINANCE ELECTIVES (SIX COURSES REQUIRED)

ECON	311	Managerial Economics	3
ECON	375	International Business Economics	3
ECON	376	Business Forecasting	3
FIN	321	Investment Principles	3
FIN	345	Management of Financial Institutions	3
FIN	365	Advanced Financial Management	3
FIN	368	Financial Derivatives & Risk Management	3
FIN	380	Multinational Finance	3
			18

FREE ELECTIVES _____ **15**

Total Semester Hours _____ **120**

Suggested Program

FIRST SEMESTER

BUAD	101	Introduction to Business	3
ENGL	101	Composition & Rhetoric	3
MATH	105	Intermediate Algebra	3
FYS	101	First Year Seminar	3
		Fine Arts	3

SECOND SEMESTER

ACCT	101	Principles of Accounting I	3
ENGL	202	Advanced Composition (for Business)	3
CAIS	191	Computer Concepts	3
SCI		Natural Sciences Core	3
BUAD	102	Business Communications	3

THIRD SEMESTER

MGMT	200	Work Force Dynamics	3
ECON	202	Principles of Econ - Micro	3
SOSC		Social Science Core	3
SCI		Natural Science Core	3
ACCT	103	Managerial Accounting	3

FOURTH SEMESTER

ECON	201	Principles of Econ - Macro	3
CAIS	101	Statistics	3
MKTG	205	Principles of Marketing	3
FIN	209	Managerial Finance	3
SOSC		Social Science Core	3

FIFTH SEMESTER

		Major Elective	3
MGMT	301	Operations Management	3
HUM		Humanities Core	3
		Free Elective	6

SIXTH SEMESTER

BLAW	251	Business Law I	3
CAIS	201	Introduction to Business Analytics	3
MGMT	320	Business Planning	3
HUM		Humanities Core	3
		Free Elective	3

SEVENTH SEMESTER

BUAD	382	Senior Project/Internship	3
		Major Elective	9
		Free Elective	3

EIGHTH SEMESTER

MGMT	350	Business Policy and Strategy	3
CAPS	390	Capstone Seminar	3
		Major Electives	6
		Free Elective	3

Total Semester Hours _____ **120**

Finance *Bachelor of Science Degree*

INTERNSHIP/CO-OP

Students are encouraged to pursue additional co-op experience as described on page 35 using the BUAD-200 course up to three times (one credit each). These credits will be used as part of the student's degree program.

International Business *Bachelor of Science Degree*

Chair, Undergraduate Programs:
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E-mail: japage@bridgeport.edu

Curriculum and Program Requirements

The Bachelor of Science in International Business prepares students for assuming a managerial position in any American or foreign multinational firm, developing one's own business abroad, or working for international governments and agencies. Since this major attracts many students from abroad, it provides students with an opportunity to develop multicultural awareness

and international contacts. This major is recommended for those students who expect to travel abroad or live in foreign environments. Students in this major are required to achieve proficiency in at least one foreign language before completion of the degree.

Learning Outcomes

LEARNING OBJECTIVES

- Understand the economic, cultural, legal and political issues associated with international business
- Acquire the broad discipline knowledge that is basic to international business enterprises
- Develop cultural sensitivity and effective communication skills that enable them to communicate with others from diverse backgrounds
- Acquire the skills necessary to pursue entry-level positions in an American or foreign multinational firm, develop one's own business abroad, or work for international governments or agencies

ASSESSMENT

Students' international business knowledge and skills will be tested when they begin and finish the International Business program with a program specific exam. Alumni will be asked to complete follow-up questionnaires regarding their careers in international business.

Students must earn a grade of "C" or higher in each of the four International Business major electives.

Summary of Requirements

CREDITS

General Education Requirements	33
Business Program Requirements	72
Free Electives	15
	120

GENERAL EDUCATION REQUIREMENTS

ENG	C101	Composition and Rhetoric	3
MATH	105	Intermediate Algebra	3
SCI		Natural Sciences Core	6
HUM		Humanities Core	6
FA		Fine Arts Core	3
CAPS	390	Capstone Seminar	3
SOSC		Social Sciences Core	6
			30

PROGRAM REQUIREMENTS

ACCT	101	Principles of Accounting I	3
ACCT	103	Managerial/Cost Accounting	3
BLAW	251	Business Law I	3
BUAD	101	Introduction to Business	3
BUAD	102	Business Communications	3
BUAD	382	Senior Project/Internship 3	3
CAIS	101	Statistics	3
CAIS	191	Computer Concepts	3
CAIS	201	Introduction to Business Analytics	3
ECON	201	Principles of Economics - Macro	3
ECON	202	Principles of Economics - Micro	3
ENGL	202	Advanced Composition (for Business)	3
FIN	209	Managerial Finance	3
MGMT	200	Work Force Dynamics	3
MGMT	301	Operations Management	3
MGMT	320	Business Planning	3
MGMT	350	Business Policy and Strategy	3
MKTG	205	Principles of Marketing	3
			54

INTERNATIONAL BUSINESS ELECTIVES (SIX COURSES REQUIRED)

IBU	325	Import/Export	3
IBU	360	Business and International Law	3
IBU	362	International Sales (Commercial) Transactions	3
IBU	363	Settlement of International Business Disputes	3
IBU	366	International Business and Customs Unions	3
		or	
		Other approved courses in a foreign language, study abroad, history, or political science.	
			18

FREE ELECTIVES _____ 15

Total Semester Hours _____ 120

Suggested Program

FIRST SEMESTER

BUAD	101	Introduction to Business	3
ENGL	101	Composition & Rhetoric	3
MATH	105	Intermediate Algebra	3
FYS	101	First Year Seminar	3
		Fine Arts	3

SECOND SEMESTER

ACCT	101	Principles of Accounting I	3
ENGL	202	Advanced Composition (For Business)	3
CAIS	191	Computer Concepts	3
SCI		Natural Sciences Core	3
BUAD	102	Business Communications	3

THIRD SEMESTER

MGMT	200	Work Force Dynamics	3
ECON	202	Principles of Economics - Micro	3
SOSC		Social Science Core	3
SCI		Natural Science Core	3
ACCT	103	Managerial Accounting	3

FOURTH SEMESTER

ECON	201	Principles of Economics - Macro	3
CAIS	101	Statistics	3
MKTG	205	Principles of Marketing	3
FIN	209	Managerial Finance	3
SOSC		Social Science Core	3

FIFTH SEMESTER

		Major Elective	3
MGMT	301	Operations Management	3
HUM		Humanities Core	3
		Free Elective	6

SIXTH SEMESTER

BLAW	251	Business Law I	3
CAIS	201	Introduction to Business Analytics	3
MGMT	320	Business Planning	3
HUM		Humanities Core	3
		Free Elective	3

SEVENTH SEMESTER

BUAD	382	Senior Project/Internship	3
		Major Elective	9
		Free Elective	3

EIGHTH SEMESTER

MGMT	350	Business Policy and Strategy	3
CAPS	390	Capstone Seminar	3
		Major Electives	6
		Free Elective	3

Total Semester Hours _____ **120**

International Business *Bachelor of Science Degree*

INTERNSHIP/CO-OP

Students are encouraged to pursue additional co-op experience as described on page 35 using the BUAD-200 course up to three times (one credit each). These credits will be used as part of the student's degree program.

Management and Industrial Relations *Bachelor of Science Degree*

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Curriculum and Program Requirements

The Management and Industrial Relations major prepares graduates to enter the workplace as supervisors, operations managers, human resources technicians and start-up entrepreneurs. The program prepares students to take advantage of opportunities in the global job market. Research, special projects and independent study permit each student to fit the major to their personal interests, values and aspirations. Operational issues as well as broad management policy concerns are emphasized, assuring relevance of studies to a student's starting position and readiness for growth in any organization, domestic or global.

The program offers flexibility in the selection of electives to fulfill the major requirements. After completion of required courses, the student may elect courses in small business and entrepreneurship, advanced operations management, human resource skills and programs, labor law and conflict management, to complete the major.

Students following an entrepreneurial studies track, for instance, would take courses in small business, advanced operations management, and labor law; and complete an independent study focused on preparation of a comprehensive business plan for a prospective business start-up.

Students should consult with the designated undergraduate advisor to plan the selection and sequencing of courses to satisfy the major requirements.

Learning Outcomes

LEARNING OBJECTIVES

Students will: 1) learn how to work effectively with people in an organization; 2) learn the management principles necessary to pursue entry level positions; 3) learn how to effectively communicate; and 4) develop an understanding of organizational processes.

ASSESSMENT

Students will be evaluated and benchmarked with a standardized management specific test. Students' management knowledge and skills will be tested when they begin and finish their Management program with a program specific exam.

Student must earn a grade of "C" or higher in each of the four Management major electives.

Summary of Requirements

CREDITS

General Education Requirements	33
Management Program Requirements	72
Free Electives	15
	120

GENERAL EDUCATION REQUIREMENTS

ENGL	101	Composition & Rhetoric	3
FYS	101	First Year Seminar	3
MATH	105	Intermediate Algebra	3
SCI		Natural Sciences Core	6
HUM		Humanities Core	6
FA		Fine Arts Core	3
CAPS	390	Capstone Seminar	3
SOSC		Social Sciences Core	6
			33

PROGRAM REQUIREMENTS

ACCT	101	Principles of Accounting I	3
ACCT	103	Managerial/Cost Accounting	3
BLAW	251	Business Law I	3
BUAD	101	Introduction to Business	3
BUAD	102	Business Communications	3
BUAD	382	Senior Project/Internship	3
CAIS	101	Statistics	3
CAIS	191	Computer Concepts	3
CAIS	201	Introduction to CAIS	3
ECON	201	Principles of Econ - Macro	3
ECON	202	Principles of Econ - Micro	3
ENGL	202	Adv. Composition (for Business)	3
FIN	209	Managerial Finance	3
MGMT	200	Workforce Dynamics	3
MGMT	301	Operations Management	3
MGMT	320	Business Planning	3
MGMT	350	Business Policy and Strategy	3
MKTG	205	Principles of Marketing	3
		Management Electives*	18
			72

MANAGEMENT ELECTIVES

MGMT	302	Multicultural Management	3
MGMT	305	HR Issues in Management	3
MGMT	311	Hum. Res. Mgmt Programs and Skills	3
MGMT	330	Leadership Lessons from the Movies	3
MGMT	340	Conflict and Negotiation	3
MGMT	342	Labor Law and Arbitration	3
		Or other approved 300 level MGMT course	
		Select six courses	18

FREE ELECTIVES _____ **15**

Total Semester Hours _____ **120**

Suggested Program

FIRST SEMESTER

BUAD	101	Introduction to Business	3
ENGL	101	Composition & Rhetoric	3
MATH	C105	Intermediate Algebra	3
FYS	101	First Year Seminar	3
		Fine Arts	3

SECOND SEMESTER

ACCT	101	Principles of Accounting I	3
ENGL	202	Advanced Composition (for Business)	3
CAIS	191	Computer Concepts	3
SCI		Natural Sciences Core	3
BUAD	102	Business Communications	3

THIRD SEMESTER

MGMT	200	Work Force Dynamics	3
ECON	202	Principles of Economics - Micro	3
SOSC		Social Science Core	3
SCI		Natural Science Core	3
ACCT	103	Managerial Accounting	3

FOURTH SEMESTER

ECON	201	Principles of Economics - Macro	3
CAIS	101	Statistics	3
MKTG	205	Principles of Marketing	3
FIN	209	Managerial Finance	3
SOSC		Social Science Core	3

FIFTH SEMESTER

		Major Elective	3
MGMT	301	Operations Management	3
HUM		Humanities Core	3
		Free Elective	6

SIXTH SEMESTER

BLAW	251	Business Law I	3
CAIS	201	Introduction to CAIS	3
MGMT	320	Business Planning	3
HUM		Humanities Core	3
		Free Elective	3

SEVENTH SEMESTER

BUAD	382	Senior Project/Internship	3
		Major Elective	9
		Free Elective	3

Management and Industrial Relations *Bachelor of Science Degree*

EIGHTH SEMESTER

MGMT 350	Business Policy and Strategy	3
CAPS 390	Capstone Seminar	3
	Major Electives	6
	Free Elective	3
Total Semester Hours		**120**

INTERNSHIP/CO-OP

Students are encouraged to pursue additional co-op experience as described on page 35 using the BUAD-200 course up to three times (one credit each). These credits will be used as part of the student's degree program.

Marketing *Bachelor of Science Degree*

Chair, Undergraduate Programs:
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Curriculum and Program Requirements

In order to prepare for the varied demands of a career in marketing, the Marketing major courses follow an interdisciplinary approach, stressing fundamentals of behavioral analysis, decision-making, research, and the application of managerial techniques to marketing problems.

Learning Outcomes

LEARNING OBJECTIVES

- Learn to create a marketing mix to market products, services, and ideas to customers
- Acquire the knowledge to develop a marketing strategy
- Learn how to effectively communicate marketing information to their various constituencies
- Develop an understanding of human behavior related to marketing activity

ASSESSMENT

Students will be evaluated and benchmarked with a standardized marketing test. Students' marketing knowledge and skills will be tested when they begin and finish the Marketing program with a program specific exam.

Students must earn a grade of "C" or higher in each of the four marketing major courses.

Summary of Requirements

CREDITS

General Education Requirements		33
Marketing Program Requirements		72
Free Electives		15
		120

GENERAL EDUCATION REQUIREMENTS

ENG	C101	Composition and Rhetoric	3
MATH	105	Intermediate Algebra	3
SCI		Natural Sciences Core	6
HUM		Humanities Core	6
FA		Fine Arts Core	3
CAPS	390	Capstone Seminar	3
SOSC		Social Sciences Core	6
			30

PROGRAM REQUIREMENTS

ACCT	101	Principles of Accounting I	3
ACCT	103	Managerial/Cost Accounting	3
BLAW	251	Business Law I	3
BUAD	101	Introduction to Business	3
BUAD	102	Business Communications	3
BUAD	382	Senior Project/Internship 3	3
CAIS	101	Statistics	3
CAIS	191	Computer Concepts	3
CAIS	201	Introduction to Cais	3
ECON	201	Principles of Economics - Macro	3
ECON	202	Principles of Economics - Micro	3
ENGL	202	Advanced Composition (For Business)	3
FIN	209	Managerial Finance	3
MGMT	200	Work Force Dynamics	3
MGMT	301	Operations Management	3
MGMT	320	Business Planning	3
MGMT	350	Business Policy and Strategy	3
MKTG	205	Principles of Marketing	3
			54

MARKETING ELECTIVES (SIX COURSES REQUIRED)

MKTG	306	Consumer Behavior	3
MKTG	307	Integrated Marketing Communications	3
MKTG	308	Marketing Research	3
MKTG	309	Digital Marketing	3
MKTG	310	Service Marketing	3
MKTG	319	Advertising Management	3
MKTG	325	Sales Management	3
MKTG	339	Retailing Management	3
MKTG	342	Multinational Marketing	3
MKTG	348	Internet and Social Media	3
			18

FREE ELECTIVES		**15**
Total Semester Hours		**120**

Suggested Program

FIRST SEMESTER

BUAD	101	Introduction to Business	3
ENGL	101	Composition & Rhetoric	3
MATH	105	Intermediate Algebra	3
FYS	101	First Year Seminar	3
		Fine Arts	3

SECOND SEMESTER

ACCT	101	Principles of Accounting I	3
ENGL	202	Advanced Composition (For Business)	3
CAIS	191	Computer Concepts	3
SCI		Natural Sciences Core	3
BUAD	102	Business Communications	3

THIRD SEMESTER

MGMT	200	Work Force Dynamics	3
ECON	202	Principles of Econ - Micro	3
SOSC		Social Science Core	3
SCI		Natural Science Core	3
ACCT	103	Managerial Accounting	3

FOURTH SEMESTER

ECON	201	Principles of Econ - Macro	3
CAIS	101	Statistics	3
MKTG	205	Principles of Marketing	3
FIN	209	Managerial Finance	3
SOSC		Social Science Core	3

FIFTH SEMESTER

		Major Elective	3
MGMT	301	Operations Management	3
HUM		Humanities Core	3
		Free Elective	6

SIXTH SEMESTER

BLAW	251	Business Law I	3
CAIS	201	Introduction to Business Analytics	3
MGMT	320	Business Planning	3
HUM		Humanities Core	3
		Free Elective	3

SEVENTH SEMESTER

BUAD	382	Senior Project/Internship	3
		Major Elective	9
		Free Elective	3

EIGHTH SEMESTER

MGMT	350	Business Policy and Strategy	3
CAPS	390	Capstone Seminar	3
		Major Electives	6
		Free Elective	3

Total Semester Hours		**120**

INTERNSHIP/CO-OP

Students are encouraged to pursue additional co-op experience as described on page 35 using the BUAD-200 course up to three times (one credit each). These credits will be used as part of the student's degree program.

Analytics and Systems *Master of Science Degree*

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The UB MS in Analytics & Systems Value Proposition

The MS in Analytics & Systems (MS A&S) is a 30-credit graduate program designed to meet the needs of students whose career goals include integrating data, technology, and methods to provide insights for constructive decision-making. The program accomplishes its mission by developing student expertise in technical skill, solution architecture and delivery, analysis and management. Graduates of the MS A&S will be well-positioned to enter contemporary data-driven organizations.

Students will learn both a breadth of knowledge of information systems and a depth of skills in modern analytical methods. Classwork involves both rigorous instruction and required projects to prepare graduates for the unique stresses of this fast-paced industry. A similar MBA program with a concentration in Analytics Intelligence is offered by our Ernest C. Trefz School of Business; this MS A&S is for students looking to focus more on analytics and systems specifically, rather than business management generally.

Positive program outcomes will be achieved through the knowledge and skills the students will acquire from a comprehensive curriculum design, instruction in an effective learning environment, opportunities for inquiry, and professional development. This program largely leverages our existing offerings. While more specific and analytical in nature, these learning outcomes are in line with our institutional mission, and our MBA program.

Program Characteristics

Although students with work experience will find maximum benefit from the MS A&S; no previous work experience is required. The curriculum is designed to recognize and accommodate substantial diversity in preparation and experience as well as the different goals and career expectations of students. For this reason, some students may be required to complete preparatory coursework to successfully graduate from the 30-credit MS A&S program. Flexible course delivery enables students to proceed at their desired pace. Most students complete the MS A&S program in 18 to 24 months.

Learning Outcomes

Students will integrate the knowledge and skills they have gained throughout their graduate program to develop and evaluate information systems and analytics by:

Technical

- Demonstrating an understanding of concepts learned throughout this graduate program
- Describing the business drivers and critical success factors for effective analytics and systems project and program delivery
- Using research, tools and techniques for complex analytical solutions that capture, consolidate and present information for meaningful insights

Human

- Communicating complicated information at a professional level clearly and concisely
- Understanding how to manage all aspects of the data capture, delivery and analysis process
- Demonstrating initiative, discipline, and follow-through on assignments and projects
- Facilitating meaningful dialogue related to class topics

Conceptual

- Evaluating the advantages and disadvantages of analytics and systems solution designs, tools and visualization options
- Analyzing trends within data, facilitating their application, and sharing throughout the organization
- Applying the theories and techniques learned throughout this program with focus on analytics, information systems, sourcing, and vendor management.

Learning Outcomes will be assessed using the following measures:

- Research papers integrating market trends with class topics
- Exams measuring the effective acquisition of technical, systems design and delivery acumen
- "Hands on" tools and calculation assignments and projects covering key managerial aspects of analytics and systems design and delivery
- Student attendance and class participation
- A thesis or internship that demonstrates the ability to conduct investigations in the analytics and systems discipline.

Language Requirement

Conditionally accepted international students with an undergraduate degree that was taught in a language other than English are required to successfully complete additional language-related coursework and third-party assessment testing before joining the program.

Academic Preparation

Students with undergraduate preparation in a non-business field may be required to complete up to 12 credits of preparatory coursework. Students with a strong academic record (B or better in each case) from an accredited university may be able to waive preparatory foundation courses. Accounting & Business Law (ACCT500) requires both managerial and financial accounting, as well as any course labelled business law that included contracts and tort law. Economics & Finance (ECON500) requires both micro- and macro-economics, as well as finance that included time value of money. Information Systems & Quantitative Methods (ITKM500) requires information systems, intermediate Excel, and either MS Excel- or SAS-based statistics or research methods. Management & Marketing (MGMT500) requires organizational behavior, operations management, and marketing or any similarly named course that includes consumer behavior.

Preparatory Courses: Acquiring the Foundation for Success (up to 12 Credits)

This course provides the basic fundamentals that serve as a necessary foundation for the MS A&S program.

- ACCT500 Accounting & Business Law
- ECON500 Economics & Finance
- ITKM500 Information Technology & Quantitative Methods
- MGMT500 Management & Marketing

Analytics and Systems *Master of Science Degree*

MS A&S Program Curriculum (30 credits)

CORE COURSES (6 CREDITS):

ITKM505   Information Systems & Knowledge Management

MGMT555   Global Project Management

ANALYTICS INTELLIGENCES COURSES (9 CREDITS)

ITKM548   Enterprise Intelligence and Decision Support Systems

ITKM549   Technical Concepts for Analytics Professionals

ITKM560   Foundations in Advanced Analytics

ANALYTICS APPLICATIONS COURSES (9 CREDITS)

MKTG525   Data-Driven Marketing

FIN534   Behavioral Economics and Finance

MGMT534   Strategic Sourcing & Vendor Management

CAPSTONE COURSES (6 CREDITS)

GLDP501   Research Methods

BUCP598   Thesis or BUCP599 Internship

Eligibility for Transfer Credits in the 30-credit upper-level Program Courses

For students with graduate coursework from a regionally accredited university: No more than two (graduate) courses may be transferred into the MS A&S program. For students who have earned graduate credit from the Trefz School that is not included in a conferred degree: all applicable (graduate) three-credit courses may be transferred into the MS A&S program.

MS/MBA Dual-Degree Program

The Trefz School offers students the opportunity to acquire concurrent (students must not be eligible to graduate from either program until the final semester) graduate degrees within the Trefz School in which students may apply up to 15 credit hours to both programs. A minimum of 51 credit hours must be completed to satisfy the requirements of this dual-degree program.

The BUCP599 Capstone course is available for dual-degree students with the following modification; students may complete a three-credit internship and one one-credit in each program."

STEM Designation

The MS A&S is classified by ICE (U.S. Immigration and Customs Enforcement) as a STEM (Science, Technology, Engineering and Math) degree.

Progression/Sequence of Coursework

Preparatory coursework must be taken in the first semester. Students begin the formal MS A&S program by completing the eight Core courses (in any order). The Capstone courses should be taken in the final semester, or final two semesters.

Fulltime Status

Fulltime status requires at least three classes per semester (spring and fall) for international students and at least two classes per semester for domestic students. International students on an F1 or J1 visa may take fewer than 9 credits only once during their graduate tenure (spring and fall semesters), which is only permitted in their final semester.

Grading Policy

A grade of C or better is required for credit toward graduation in all preparatory and program coursework. Students are expected to maintain a semester GPA of 3.0 or better throughout their studies. Those students who earn a semester GPA below 3.0 will be placed on probation and must comply with the associated formal process to successfully maintain proper status.

Requirements for Graduation

To qualify for the award of the degree of Master of Science in Analytics and Systems, a student must fulfill the following minimum requirements:

1. Admitted to candidacy for the degree in the School of Business.

2. Satisfactorily complete all academic requirements with a cumulative grade point average grade of "B" (CGPA = 3.0) or better.

3. File an application for the award of the degree at the Registrar's Office on or before the date published in the University Calendar.

4. Complete all academic requirements within five (5) years from the date of first registration, unless a petition for extension is granted. Extensions are granted only for compelling reasons.

Business Administration *Master of Business Administration Degree*

Associate Dean: Arthur C. McAdams III
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The UB MBA Value Proposition

The Master of Business Administration (MBA) is a valuable education for aspiring and practicing managers in any industry or field of endeavor. The graduate program provides early to mid-career professionals with the breadth and depth of theoretical and practical knowledge and skills that are necessary for effective leadership in an increasingly international and dynamic environment. Our innovative, interdisciplinary, and interactive MBA experience emphasizes leadership, teamwork, analytical thinking, business and management competencies, and communication to give you a competitive edge for success.

Program Characteristics

Although students with work experience will find maximum benefit from the MBA; no previous work experience is required. The curriculum is designed to recognize and accommodate substantial diversity in preparation and experience as well as the different goals and career expectations of students. For this reason, some students may be required to complete preparatory coursework to successfully graduate from the 36-credit MBA program. Flexible course delivery enables students to proceed at their desired pace. Most students complete the MBA program in 18 to 24 months.

Learning Outcomes

Students will demonstrate

- knowledge in all - and proficiency in at least one of - the basic business disciplines (accounting, economics, entrepreneurship, finance, human resources, information systems, leadership, management, and marketing).
- the ability to communicate ideas clearly and concisely in oral and written structures, and in formal and informal settings.
- interpersonal and professional skills that enable them to contribute within diverse sets of teams and build internal and external relationships that facilitate success in contemporary organizations.
- information literacy, proficiency with technology, and analytical techniques for decision-making.
- critical and logical thinking that integrates concepts across disciplines with creativity and integrity enabling them to successfully lead in a dynamic global environment.

Assessment

- Papers, presentations, responses to cases, and projects are evaluated using formal rubrics as measures.
- Students, and the program as a whole, are evaluated and benchmarked across the basic business disciplines (formative - with the use of standardized academic tests) and (summative - with the use of independent third-party tests).
- Students, working in teams, are evaluated based on team performance and individual contribution.

Language Requirement

Conditionally accepted international students with an undergraduate degree that was taught in a language other than English are required to successfully complete additional language-related coursework and third-party assessment testing before joining the program.

Academic Preparation

Students with undergraduate preparation in a non-business field may be required to complete up to 12 credits of preparatory coursework. Students with a strong academic record (B or better in each case) from an accredited university may be able to waive preparatory foundation courses. Accounting & Business Law (ACCT500) requires both managerial and financial accounting, as well as any course labelled business law that included contracts and tort law. Economics & Finance (ECON500) requires both micro- and macroeconomics, as well as finance that included time value of money. Information Systems & Quantitative Methods (ITKM500) requires information systems, intermediate Excel, and either MS Excel- or SAS-based statistics or research methods. Management & Marketing (MGMT500) requires organizational behavior, operations management, and marketing or any similarly named course that includes branding and consumer behavior.

Preparatory Courses: Acquiring the Foundation for Success (12 Credits)

This coursework provides the basic fundamentals across the business disciplines that serve as a necessary foundation for the MBA program.

- ACCT500 Accounting & Business Law
- ECON500 Economics & Finance
- ITKM500 Information Technology & Quantitative Methods
- MGMT500 Management & Marketing

MBA Program Curriculum: (total of 36 credits)

- Three Components: Core, Concentration, and Capstone

CORE COURSES (18 CREDITS)

In the six Core courses you will apply the theory from the Foundation coursework through cases and real-world exercises.

- ACCT505 Managerial & Cost Accounting
- FIN505 Advanced Financial Management
- ITKM505 Information Systems & Knowledge Management
- MGMT505 Organizational Behavior
- MGMT555 Global Project Management
- MKTG505 Marketing & Branding

CONCENTRATION COURSES (9 CREDITS)

Because many careers require specialized and in-depth knowledge and skills in specific business areas, the program provides students with the opportunity to complete three courses of in-depth study in an area of their choice. Students may choose from eight concentrations.

- Accounting
- Analytics Intelligence
- Entrepreneurship
- Finance
- General
- Human Resources
- International Business
- Marketing

CAPSTONE COURSES (9 CREDITS)

The Capstone experience provides the final integration of student learning across the disciplines and the application of concepts learned to practical and competitive situations.

Capstone (9 credits)

- Integration (required)
  - o BUCP597 Strategy & Policy
- Practicum (select one)
  - o MGMT582 Business Planning
  - o BUCP589 Cases in Ethics, Innovation, & Leadership
  - o BUCP588 Research Methods
- Experiential (select one)
  - o MGMT582 Business Planning
  - o BUCP589 Cases in Ethics, Innovation, & Leadership
  - o BUCP598 Thesis (requires GLDP501: advisor assigned by discipline)
  - o BUCP599 Internship

ELIGIBILITY FOR TRANSFER CREDITS IN THE 36-CREDIT UPPER-LEVEL PROGRAM COURSES

For students who have earned graduate credit from a regionally accredited university that is not included in a conferred degree: No more than two (graduate) three-credit courses may be transferred into the MBA program. For students who have earned graduate credit from the Trefz School that is not included in a conferred degree: all applicable (graduate) three-credit courses may be transferred into the MBA program.

MBA/MS Dual-Degree Program

The Trefz School offers students the opportunity to acquire concurrent (students must not be eligible to graduate from either program until the final semester) graduate degrees within the Trefz School in which students may apply up to 15 credit hours to both programs. A minimum of 51 credit hours must be completed to satisfy the requirements of this dual-degree program.

Multiple MBA Concentrations

Students may gain additional concentrations by successfully completing three courses in any of the eight concentrations (courses may not be counted twice toward concentrations). Students may receive a double concentration in their original concentration by taking three additional advanced courses in the discipline.

MBA/Engineering Partnership

In an arrangement, with the School of Engineering, approved Engineering courses offered by the College of Engineering are available for students in the MBA degree. Specific courses for this study are selected with - and approved by - the student's advisor.

Progression/Sequence of Coursework

Preparatory coursework is the first step: Students start their studies by completing all necessary Preparatory courses. Once all the Preparatory courses have been completed, students may enter the formal MBA program. In some cases, students may take a combination of Preparatory and Core courses during their transition into the Program, but students should not take a Preparatory and advanced class in the same discipline at the same time (e.g. ITKM500 and ITKM505).

Students begin the formal MBA program by completing the six Core courses (in any order). The three Capstone courses should be taken in the final semester, or final two semesters, and must only be taken once all Core courses have been successfully completed (not concurrently).

Fulltime Status

Fulltime status requires at least three classes per semester (spring and fall) for international students and at least two classes per semester for domestic students. International students on an F1 or J1 visa may take fewer than 9 credits only once during their graduate tenure (spring and fall semesters), which is only permitted in their final semester.

Grading Policy

A grade of C or better is required for credit toward graduation in all preparatory and program coursework. Students are expected to maintain a semester GPA of 3.0 or better throughout their studies. Those students who earn a semester GPA below 3.0 will be placed on probation and must comply with the associated formal process to successfully maintain proper status.

Requirements for Graduation

To qualify for the award of the degree of Master of Business Administration, a student must fulfill the following minimum requirements:

1. Admitted to candidacy for the degree in the School of Business.

2. Satisfactorily complete all academic requirements with a cumulative grade point average grade of "B" (CGPA = 3.0) or better.

3. File an application for the award of the degree at the Registrar's Office on or before the date published in the University Calendar.

4. Complete all academic requirements within five (5) years from the date of first registration, unless a petition for extension is granted. Extensions are granted only for compelling reasons.

Finance *Master of Science Degree*

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The UB MS in Finance Value Proposition

The Master of Science in (MSF) is a 30-credit graduate program designed to meet the needs of a distinct type of professional in the finance industry. The MSF develops the ability of students whose career goals include specialist, technical, and management roles in financial enterprises. The program accomplishes its mission by developing student expertise in financial instruments, financial technology, financial analysis and financial management. Positive program outcomes will be achieved through the knowledge and skills the students will acquire from a comprehensive curriculum design, instruction in an effective learning environment, opportunities for inquiry, and professional development. This program largely leverages our existing offerings.

Students learn concepts in risk, finance, investments, and analytics that provide the basis for careers in finance. Students also develop the technical and quantitative skills needed to pursue a variety of careers in the finance industry. While more specific and analytical in nature, these learning outcomes are in line with our institutional mission, and our MBA program.

Students will learn how to evaluate and price a financial opportunity. They will learn how to gauge the appropriate level of risk to discount future projections. They will learn how to compare across investment opportunities at a given time and how to allocate among them in an optimal way. They will learn how to create useful tools for answering financial questions so that reports could be generated automatically and progress can be tracked. They will learn how to both assess and manage risk. Most importantly and most generally, they will learn how to solve financial problems with finely honed problem-solving skills via analytical capabilities and data-driven decision-making.

Program Characteristics

Although students with work experience will find maximum benefit from the MSF, no previous work experience is required. The curriculum is designed to recognize and accommodate substantial diversity in preparation and experience as well as the different goals and career expectations of students. For this reason, some students may be required to complete preparatory coursework to successfully graduate from the 30-credit MSF program. Flexible course delivery enables students to proceed at their desired pace. Most students complete the MSF program in 18 to 24 months.

Learning Outcomes

Students will integrate the knowledge and skills they have gained throughout their graduate program to develop and evaluate financial and risk management strategies by:

TECHNICAL

- Demonstrating an understanding of concepts learned throughout their graduate program
- Testing a hypothesis or market strategy through robust historical evaluation
- Using research, methods, and instruments to price assets, evaluate risk, and manage portfolios
- Explain and differentiate standard financial models and their assumptions

HUMAN

- Communicating complicated information at a professional level using appropriate acumen
- Demonstrating initiative, discipline, and follow-through on assignments
- Facilitating meaningful dialogue and reasoned disagreements related to class topics and current financial events

CONCEPTUAL

- Evaluating the advantages and disadvantages associated with evolving regulatory environments
- Analyzing organizational decisions relating to risk management and financial practice
- Applying the theories and techniques learned throughout the graduate finance program

LEARNING OUTCOMES WILL BE ASSESSED USING THE FOLLOWING MEASURES:

- participation in classroom activities addressing current financial events,
- preparing case studies,
- creating one-off back tests of financial hypotheses,
- performing simulations,
- developing reusable financial and risk management tools,
- performing due diligence research projects,
- writing 5-to-10-page papers on critical financial topics,
- presenting findings in a five-minute professional presentation,
- and one capstone exercise reflecting their accumulated knowledge and skills.

Language Requirement

Conditionally accepted international students with an undergraduate degree that was taught in a language other than English are required to successfully complete additional language-related coursework and third-party assessment testing before joining the program.

Academic Preparation

Students with undergraduate preparation in a non-business field may be required to complete up to 12 credits of preparatory coursework. Students with a strong academic record (B or better in each case) from an accredited university may be able to waive preparatory foundation courses. Accounting & Business Law (ACCT500) requires both managerial and financial accounting, as well as any course labelled business law that included contracts and tort law. Economics & Finance (ECON500) requires both micro- and macroeconomics, as well as finance that included time value of money. Information Systems & Quantitative Methods (ITKM500) requires information systems, intermediate Excel, and either MS Excel- or SAS-based statistics or research methods. Management & Marketing (MGMT500) requires organizational behavior, operations management, and marketing or any similarly named course that includes consumer behavior.

Finance *Master of Science Degree*

Preparatory Courses: Acquiring the Foundation for Success (up to 12 Credits)

This coursework provides the basic fundamentals across the business disciplines that serve as a necessary foundation for the MSF program.

- ACCT500 Accounting & Business Law
- ECON500 Economics & Finance
- ITKM500 Information Technology & Quantitative Methods
- MGMT500 Management & Marketing

MSF Program Curriculum: (30 credits total - all courses are three credits)

CORE COURSES (24 CREDITS)

FIN 505:	Advanced Financial Management & Policy
FIN 520:	Investment Analysis
FIN 525:	International Financial Management
FIN 534:	Behavioral Economics and Algorithmic Finance
FIN 540:	Financial Analysis & Modeling
FIN 545:	Financial Derivatives & Risk Management
ITKM505:	Information Systems & Knowledge Management
ITKM560:	Foundations in Advanced Analytics

CAPSTONE COURSES (6 CREDITS)

GLDP501 Research Methods
BUCP598 Thesis or BUCP599 Internship

Eligibility for Transfer Credits in the 30-credit upper-level Program Courses

For students with graduate coursework from a regionally accredited university: No more than two (graduate) courses may be transferred into the MSF program. For students who have earned graduate credit from the Trefz School that is not included in a conferred degree: all applicable (graduate) three-credit courses may be transferred into the MSF program.

MS/MBA Dual-Degree Program

The Trefz School offers students the opportunity to acquire concurrent (students must not be eligible to graduate from either program until the final semester) graduate degrees within the Trefz School in which students may apply up to 15 credit hours to both programs. A minimum of 51 credit hours must be completed to satisfy the requirements of this dual-degree program.

STEM Designation

The MSF is classified by ICE (U.S. Immigration and Customs Enforcement) as a STEM (Science, Technology, Engineering and Math) degree.

Progression/Sequence of Coursework

Preparatory coursework is the first step. In some cases, students may take a combination of Preparatory and Core courses during their transition into the Program. Students begin the formal MSF program by completing the eight Core courses (in any order). The Capstone courses should be taken in the final semester, or final two semesters.

Fulltime Status

Fulltime status requires at least three classes per semester (spring and fall) for international students and at least two classes per semester for domestic students. International students on an F1 or J1 visa may take fewer than 9 credits only once during their graduate tenure (spring and fall semesters), which is only permitted in their final semester.

Grading Policy

A grade of C or better is required for credit toward graduation in all preparatory and program coursework. Students are expected to maintain a semester GPA of 3.0 or better throughout their studies. Those students who earn a semester GPA below 3.0 will be placed on probation and must comply with the associated formal process to successfully maintain proper status.

Requirements for Graduation

To qualify for the award of the degree of Master of Science in Finance, a student must fulfill the following minimum requirements:

1. Admitted to candidacy for the degree in the School of Business.
2. Satisfactorily complete all academic requirements with a cumulative grade point average grade of "B" (CGPA = 3.0) or better.
3. File an application for the award of the degree at the Registrar's Office on or before the date published in the University Calendar.
4. Complete all academic requirements within five (5) years from the date of first registration, unless a petition for extension is granted. Extensions are granted only for compelling reasons.

COLLEGE OF ENGINEERING, BUSINESS, AND EDUCATION

School of Education Programs

Education *Master of Science in Elementary or Secondary Degrees, Sixth Year Certificates of Advanced Studies, and Certification Areas*

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This degree program provides advanced study in content and content pedagogy for persons interested in careers in education, and/or certification in the State of Connecticut to teach on the elementary, or secondary levels.

Intern Program

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The Graduate School of Education provides an internship option for the following students: (1) those seeking a Master's degree or 6th Year Certificate of Advanced Studies and teacher certification; (2) those already certified and seeking a Master's degree or Sixth Year Certificate of Advanced Studies, or (3) those seeking a Master's degree only for work in nonpublic American schools, schools in another country, or in other educational settings. This internship is designed to integrate field experience with graduate course work. During the internship students earn thirty-three tuition remission credits.

Master's Degree Program

Master of Science in Elementary and Secondary Education

(Connecticut Teacher Certification)

This program provides educators with the opportunities for in-depth study of subject content, techniques and materials appropriate to contemporary classrooms within a structured framework of field concentration and professional development. Emphasis is placed on selected areas of concentration in content and content pedagogy and professional course work for the development of individual clinical competencies.

Individuals seeking Connecticut certification must take courses required for their license in a Master's Planned Program of Study. This program consists of foundation courses, subject content courses, professional courses, field experiences, and residency teaching.

The following certification tracks are available: Elementary content area courses; Secondary Academic Subjects: Biology, Physics, General Science, Chemistry, Earth Science, English, Mathematics, History and Social Studies, and Music (K-12).

Teacher Preparation Programs

Candidates who seek certification to teach in Connecticut must follow a Planned Program of Study that results in a Master's Degree and a recommendation by the State Certification Officer at the University for an Initial Educator Certificate in the State of Connecticut.

Admissions into the Master's Degree (Certification Track Programs)

Students seeking certification must apply to the program of their choice and must meet the following requirements PRIOR to admission into a Certification Track Program in Elementary, Secondary Academic Subjects, or Music:

1. A Bachelor's Degree in a subject area major (not professional education) from a regionally accredited institution with thirty-nine credits in general education, including course work in English, Mathematics, Natural Science, Social Studies, and World Language or Fine Arts (Grades below a C are NOT accepted for this category).

2. Passing scores on the PRAXIS I exams in Reading, Writing, and Mathematics or an official Essential Skills Test waiver based on required passing scores on the SAT, ACT, GRE, or La Prueba de Aptitud Academica.

3. Undergraduate GPA of at least a B.

4. A well-written essay, at least 350 words, describing the candidate's reasons for enrolling in the program and experience relevant to teaching and demonstrating the appropriate dispositions for becoming a teacher.

5. Two letters of recommendation from persons able to testify to the candidate's suitability as a prospective teacher and potential for graduate-level work.

Candidates seeking admission to the certification-track programs are expected to possess basic technology proficiencies, such as word processing, sending and receiving e-mail messages, using the Internet, and the University's web based platforms.

All candidates for Connecticut State Certification must meet the following additional requirements prior to recommendation for certification:

1. Completion of all required Planned Program course work

2. Completion of all General Education (undergraduate requirements)

3. PRAXIS I (or waiver) and PRAXIS II examinations, as well as any additional - state mandated assessments for specific certification areas

4. Demonstration of all state-required program competencies

5. Demonstration of the knowledge, skills, and dispositions for teaching in the program area, including successful completion of all performance assessments specific to the certification program.

Program Goals

The Teacher Preparation Program Goals coincide with the six domain goals of the Connecticut Common Core of Teaching and the national States' Common Core of Teaching. The Teacher Preparation program at the University of Bridgeport seeks to develop teachers who can accomplish all of the following:

Understand and apply essential skills, central concepts, and tools of inquiry in their subject matter or field.

Promote student engagement, independence, and interdependence in learning by facilitating a positive learning community.

Plan and Implement instruction in order to engage students in rigorous and relevant learning and to promote their curiosity.

Use multiple measures to analyze student performance and to inform subsequent planning and instruction.

Maximize support for student learning by developing and demonstrating professionalism, collaboration with others, and leadership.

Education *Master of Science in Elementary or Secondary Degrees, Sixth Year Certificates of Advanced Studies, and Certification Areas*

Elementary Education, K-6, Certification Track Program

Co-Chair: Steven Rosenberg, Lori Noto
Email: srosenbe@bridgeport.edu,
        lorinoto@bridgeport.edu

Planned Program of Study

PRE-PROFESSIONAL REQUIREMENTS COURSEWORK

FOUNDATIONS OF EDUCATION – 3 credits (required)

EDUC 502	Philosophical Foundations of Modern Education	3
or EDUC 503	Differentiated Instruction: Building on Student Diversity	3
HUMAN GROWTH AND DEVELOPMENT – 3 credits (required)		
EDUC 509	Psychological Foundations in Education	3

SPECIAL EDUCATION – 3 credits (required)

EDUC 564	Education of the Exceptional Student	3

PROFESSIONAL EDUCATIONAL REQUIREMENTS
CURRICULUM AND METHODS OF TEACHING METHODS AND MATERIALS – 6 credits (required)
(TWO OF THE FOLLOWING)

EDUC 441C	Methods and Materials in Teaching Mathematics	2
and EDUC 442C	Methods and Materials in Teaching Social Studies	2
and EDUC 443C	Methods and Materials in Teaching Science	2

LITERACY – 9 credits (required)

EDUC 440C	Methods and Materials in Teaching Language Arts	3
EDUC 573	Early Literacy Instruction	2
and EDUC 574	Developmental Reading in the Elementary School	3

STATUTORY REQUIREMENTS – 1 credit (required)

EDUC 511	Statutory Requirements in Education	1

FIELD EXPERIENCE/RESIDENCE TEACHING – 6 credits plus Supervised Residency Teaching

EDUC 450	Field Experience	6*
or EDUC 515C	Internship — First Semester	3
and EDUC 516C	Internship — Second Semester	3
and EDUC 548C	Directed/Supervised Residence Teaching	6

PRAXIS II Examinations (required)
Connecticut Foundations of Reading Test (required)

ADDITIONAL GRADUATE COURSES AND ELECTIVES

Additional Graduate Coursework (Required if noted)
MATHEMATICS (Adviser approval is needed for this course.)

EDUC 399	College Math for Teachers	2

LITERACY AND ENGLISH LANGUAGE LEARNING

EDUC 536C	Children's Literature	3
EDUC 570	Instruction for the English Language Learner	1

UNITED STATES HISTORY

HIST 300	U.S. History for Teachers	3

FINAL DEGREE REQUIREMENT

(Choose one; certification-track students must take PRAXIS II and Connecticut Foundations of Reading Test.)

EXAMINATIONS (required for certification)
PRAXIS II
Connecticut Foundations of Reading Test

EDUC 566	Contemporary Educational Problems II	3
EDUC 595	Thesis Research	3

Total Number of Credits

Master of Science degree is a minimum of 33 credits.
(not including 6 credits for student teaching)

OTHER REQUIREMENTS FOR STATE OF CONNECTICUT CERTIFICATION

Additional Coursework for Certification
(required if noted)
*EDUC 450 may be taken in 2 semesters (3 credits each) or one semester at 6 credits.

Masters of Science in Secondary Education, Certification Track Programs

Planned Program of Study

PRE-PROFESSIONAL REQUIREMENTS COURSEWORK

FOUNDATIONS OF EDUCATION – 3 credits (required)

EDUC 502	Philosophical Foundations of Modern Education	3
or EDUC 503	Differentiated Instruction: Building on Student Diversity	3
HUMAN GROWTH AND DEVELOPMENT – 3 credits (required)		
EDUC 509	Psychological Foundations in Education	3

SPECIAL EDUCATION – 3 credits (required)

EDUC 564	Education of the Exceptional Student	3

PROFESSIONAL EDUCATIONAL REQUIREMENTS

CURRICULUM AND METHODS OF TEACHING
Methods and Materials–Secondary Level – 3 credits (required)
(Students must take the Methods and Materials course specific to the certification area).

EDUC 440J	Methods and Materials in Teaching Language Arts	3
or EDUC 441J	Methods and Materials in Teaching Mathematics	3
or EDUC 442J	Methods and Materials in Teaching Social Studies	3
or EDUC 443J	Methods and Materials in Teaching Science	3

CONTENT LITERACY & LITERATURE – 3 credits (required)

EDUC 575J	Reading and Writing in the Content Areas	3

(Secondary English Education Program Students)– 3 credits (required)

EDUC 536J	Adolescent Literature	3

STATUTORY REQUIREMENTS – 1 credit (required)

EDUC 511	Statutory Requirements in Education	1

Supervised Residency Teaching

EDUC 450	Field Experience	6*
or EDUC 515J	Internship	3
and EDUC 516J	Internship	3
and EDUC 548J	Directed/Supervised Residence Teaching	6

PRAXIS II

ADDITIONAL PROGRAM REQUIREMENTS

Additional Coursework Required if Noted

EDUC 500	Research and Report Writing	3
EDUC 570	Instruction for the English Language Learner	1
HIST 300	U.S. History for Teachers	3

FINAL DEGREE REQUIREMENT

EXAMINATIONS (required for certification)
PRAXIS II

EDUC 566	Contemporary Educational Problems II	3
or		
EDUC 595	Thesis Research	3

Total Number of Credits

Master of Science degree is a minimum of 33 credits.
(not including 6 credits of student teaching)

OTHER REQUIREMENTS FOR STATE OF CONNECTICUT CERTIFICATION

Additional Coursework for Certification or Endorsement (required if noted)
*EDUC 450 may be taken in 2 semesters (3 credits each) or one semester at 6 credits.

Specific Subject Area Requirements for Secondary Certification

Each student must have the appropriate undergraduate coursework for the certification area. Students are advised to check with their academic advisor for all undergraduate and graduate certification requirements.

Education *Master of Science in Elementary or Secondary Degrees, Sixth Year Certificates of Advanced Studies, and Certification Areas*

BIOLOGY, CHEMISTRY, EARTH SCIENCE, GENERAL SCIENCE, OR PHYSICS

Chair: Nelson Ngoh
Email: ngoh@bridgeport.edu

REQUIREMENTS

Undergraduate major in certification area or 30 credits plus nine credits in related subject(s) in certification area

EDUC 443J   Methods/Materials, Teaching Science   3

Students need to complete all requirements on their Planned Programs of Study and pass all performance assessments.

ENGLISH

Chair: Patricia Mulcahy-Ernt
Email: mulcahyp@bridgeport.edu

REQUIREMENTS

English major or 30 credits plus nine credits in related subject(s)

EDUC 440J	Methods/Materials, Teaching Language Arts	3
EDUC 536J	Adolescent Literature	3
EDMM 625	Teaching Writing in Classrooms	1

Students need to complete all requirements on their Planned Programs of Study and pass all performance assessments.

MATHEMATICS

Chair: Allen P. Cook
Email: acook@bridgeport.edu

REQUIREMENTS

Mathematics major or 30 credits plus nine credits in related subject(s)

EDUC 441J   Methods/Materials, Teaching Mathematics   3

Students need to complete all requirements on their Planned Programs of Study and pass all performance assessments.

MATH CONTENT – 12 credits (required)

MATH 401 (EDMM 600B)	Analysis I	3
MATH 402 (EDMM 600B)	Analysis II	3
MATH 407 (EDMM 600B)	Analysis III	3
MATH 414 (EDMM 600B)	Numerical Analysis	3

HISTORY AND SOCIAL STUDIES REQUIREMENTS

History major plus 18 credits in other social sciences; or major in Anthropology, Sociology, Political Science, Geology, Economics, plus 18 credits in history

EDUC 442J   Methods/Materials, Teaching Social Studies   3

Students need to complete all requirements on their Planned Programs of Study and pass all performance assessments.

MUSIC EDUCATION, K-12, CERTIFICATION TRACK

Chair: Frank Martignetti
Email: fmartigni@bridgeport.edu

Planned Program of Study

FOUNDATIONS OF EDUCATION REQUIREMENTS COURSEWORK

EDUC 503   Differentiated Instruction: Building on Student Diversity   3

HUMAN GROWTH AND DEVELOPMENT – 3 credits (required)

EDUC 509   Psychological Foundations in Education   3

*These course requirements may be met by taking an appropriate undergraduate course with a grade of at least a "B," taken within the past five years.

EDUC 564   Education Students with Exceptionalities   3

PROFESSIONAL EDUCATION REQUIREMENTS

Content Area Core:– 9 credits (required)

MSED 435	Teaching and Learning of Music	3
MSED 543	Music in Elementary Schools	3
MSED 544	Music in Secondary Schools	3

Content Area Specialization: (8)

APM 400: Private Instruction (vocal/instr.) (1-2)

MSED	511: Conducting (3)
MSED	520: Group Instruction in Voice (3)
MSED	521: Group Instruction in Strings (3)
MSED	523: Group Instruction in Woodwinds(3)
MSED	526: Group Instruction in Percussion (3)
MSED	531: Lit. & Tech. for Choral Music (3)
MSED	532: Lit. & Tech. for Instr. Music (3)
MSED	541: Choral Practicum (1)
MSED	542: Instrumental Practicum (1)
MSED	545: Technology in Music Education (3)
MSED	546: Music in Early Childhood (3)

FIELD EXPERIENCE/STUDENT TEACHING – 4 credits plus Student Teaching

| EDUC 450 | Field Experience | 4* |
| or EDUC 515 | Internship | 2 |

| and EDUC 516 | Internship | 2 |
| and MSED 590 | Directed/Supervised Resident Teaching, Music | 6 |

ADDITIONAL PROGRAM REQUIREMENTS STATUTORY REQUIREMENTS – 1 credit (required)

EDUC 511   Statutory Requirements   0

Content Literacy – 3 credits (required)

EDUC 575M Reading and Writing in the Content Areas   3

FINAL DEGREE REQUIREMENT EXAMINATIONS (required for certification)

PRAXIS II

EDUC 566   Contemporary Educational Problems II   3

EDUC 595   Thesis Research   3

Total Number of Credits

Master of Science degree is a minimum of 33 credits (not including 6 credits of student teaching)

OTHER REQUIREMENTS FOR STATE OF CONNECTICUT CERTIFICATION

Survey Course of United States History – 3 credits (required)

Additional Coursework for Certification or Endorsement (required if noted)

*EDUC 450 may be taken in 2 semesters (2 credits each) or one semester at 4 credits.

MASTER OF SCIENCE IN ELEMENTARY OR SECONDARY EDUCATION, CERTIFICATION TRACK PROGRAM IN REMEDIAL READING AND REMEDIAL LANGUAGE ARTS

Chair: Patricia Mulcahy-Ernt
Email: mulcahyp@bridgeport.edu

This 33 credit Master of Science degree course of study program at either the Elementary or Secondary level provides extensive course work and experiences in working with students in the field of literacy and language arts, leading to the initial educator certification in Remedial Reading and Remedial Language Arts. An individual with an appropriate regionally accredited Bachelor's degree may apply for this program. Although the program focuses on literacy for grades 1-12, the candidates elect either an Elementary degree focus or a Secondary degree focus through their field experiences and research. This concentration focuses on working with students in a variety of instructional settings for the purpose of teaching literacy processes, for evaluating students in reading and language arts, and for developing and evaluating literacy programs. Students learn

Education *Master of Science in Elementary or Secondary Degrees, Sixth Year Certificates of Advanced Studies, and Certification Areas*

to create appropriate literacy instruction for learners experiencing difficulty in reading and language arts. Upon completion of the coursework, field experiences, and appropriate performance assessments, students may apply for the Connecticut initial educator certificate in Remedial Reading/Remedial Language Arts, 1-12.

Program Goals

The program goals in literacy are adapted from the international Reading Association Standards for reading Professionals - Revised 2010. The goals in Literacy for the Remedial Reading and Remedial Language Arts Program are as follows:

Reading professionals understand the theoretical and evidence-based foundations of reading and writing processes and instruction.

Reading professionals use instructional approaches, materials, and an integrated, comprehensive, balanced curriculum to support learning in reading and writing.

Reading professionals us a variety of assessment tools and practices to plan and evaluate effective reading and writing instruction.

Reading professionals create and engage their students in literacy practices that develop awareness, understanding, respect, and a valuing of differences in our society.

Reading professionals create a literate environment that fosters reading and writing by integrating foundational knowledge, instructional practices, approaches and methods, curriculum materials, and the appropriate use of assessments.

Reading professionals recognize the importance of, demonstrate, and facilitate professional learning and leadership as a career-long effort and responsibility.

Admissions Criteria

A valid Connecticut teaching certificate (or proof of eligibility);

An appropriate regionally accredited Bachelor's degree;

At least two letters of recommendation from persons able to testify to your suitability as a prospective teacher and your potential for graduate-level work;

An essay demonstrating a command of the English language and setting out the reasons for wanting to enroll in the program and em-phasizing experience relevant to teaching;

A successful team interview with faculty;

Completion of at least 30 school months of successful classroom teaching experience.

Connecticut's essential skills testing requirements: passing scores in the PRAXIS I exams in Reading, Writing, and Mathematics or an official essential skills test waiver currently meeting this requirement.

Planned Program of Study

PREREQUISITE REQUIREMENTS

Foundations of Education	3
Educational Psychology	3
Children's or Adolescent Literature	3
Special Education	3

PROFESSIONAL EDUCATION REQUIREMENTS

READING AND LANGUAGE ARTS – 8 credits (required)

EDUC 440C	Methods and Materials in Teaching Language Arts	3
or EDUC 440M/J	Methods and Materials in Teaching Language Arts	3
and EDUC 574	Developmental Reading in the Elementary School	3
and EDUC 575	Reading and Writing in the Content Area	3

DIAGNOSIS AND REMEDIATION OF READING AND LANGUAGE ARTS DIFFICULTIES – 3 credits (required)

EDUC 571	Diagnosis and Intervention of Reading and Language Arts Difficulties	3

TESTS AND MEASUREMENTS – 3 credits (required)

EDUC 558	Evaluation of Instructional Outcomes	3

CLINICAL PRACTICES IN READING

AND LANGUAGE ARTS – 7 credits (required)

EDUC 596	Field Experience in Reading and Language Arts	1
EDUC 597	Practicum in Reading and Language Arts	6

ADDITIONAL PROGRAM REQUIREMENTS

SECOND LANGUAGE LEARNING AND ACQUISITION – 1 credits (required)

EDUC 570	Instruction for the English Language Learner	1

ADDITIONAL GRADUATE COURSEWORK (required if noted)

EDUC 500	Research and Report Writing	3
EDUC 515	Internship	3
EDUC 516	Internship	3
EDUC 570	Instruction for the English Language Learner	3
EDUC 573	Early Literacy Instruction	2

FINAL DEGREE REQUIREMENT

(Choose one of the following:)

EDUC 566	Contemporary Educational Problems II	3
EDUC 568	Studies in Literacy Research	1
or EDUC 595	Thesis Research	2-6

ADDITIONAL COURSEWORK FOR CERTIFICATION (required if Noted)

Total Number of Credits

M.S. Total Minimum: 33 credits

Students need to complete all requirements on their Planned Programs of Study and pass all performance assessments.

Professional Educator Development

MASTER OF SCIENCE IN ELEMENTARY OR SECONDARY EDUCATION/ CERTIFICATE OF ADVANCE STUDIES (CAS) IN ELEMENTARY OR SECONDARY EDUCATION

Chair: Norma Atkinson
Carlson Hall, Room 108
Telephone: (203) 576-4028
Fax: (203-576-4200
Email: natkinso@bridgeport.edu

This degree program provides advanced study for certified teachers and for persons interested in careers related to school-age students.

Professional Educator Development

This program is designed for students who are certified teachers or who wish to pursue a Master's degree in Elementary or Secondary Education (33 credits); or 6th year (30 credits) Certificate of Advanced Studies in Elementary or Secondary Education.

PROGRAM REQUIREMENTS

The Professional Educator Development Program combines a basic core with selected courses.

CORE COURSES

In the Research and Report Writing course (3 credits), students analyze their own school experiences and determine competencies they wish to achieve. In the Differentiated Instruction course (3 credits), methods for

addressing the needs of students' diverse strengths, background, experiences, gender, linguistic, and learning styles will be presented. In the Teacher Leadership course (3 credits), methods to maximize students' learning potential, and provide students with quality learning experiences, alignment of standards, lessons and assessments. In the final core requirement, Contemporary Problems in Education (3 credits) students demonstrate those competencies in a clinical and a research setting.

ELECTIVE COURSE TOPICS

Courses are offered in the following topics for a total of 30 or 33 credits, with several courses available under each topic. For courses offered each semester, consult the course schedule. On ground, online and hybrid formats available. Depending on availability and course scheduling, candidates may choose from among the following (courses vary between one and three credits):

EDUC:	Course Description
450	Field Experience
515	Clinical Experience – Internship Program

EDMM:	Course Description
606	No room for Bullying
609	Small Group Instruction
610	Technology Integration
617	Development and Design of Blended Learning Instructional Modules
618	Technology Literacy
619	Web Quest in Interactive Classroom
620	Applications of English Grammar
623	Interactive Reading/Balanced Literacy
624	Literacy Lessons - CMT
626	Principles of Early Childhood Education
627	Developmentally Appropriate Classrooms
628	Family and Community Partnerships
632	Dynamics of Classroom Environment
633	Critically Reflecting on Practice
634	Conflict Resolution
641	Identifying & Teaching Academically Gifted
642	Differentiated Instruction
643	The Art of Teaching Boys & Girls Differently
644	Character Education
645	Student Centered Instruction
646	Reaching Difficult Students
654	Mastering the Interview Process
655	Positive Student/Teacher Relationships
669	Mysteries of the U.S - Historical
670	Instructing with Modern Media
671	Using Historical Fiction
672	Urban Education
679	Using STEM in the Classroom
687	Inquiry Learning Across Disciplines
688	Curriculum Writing and Revision
692	Teacher Leadership
693	School Law
694	A Practical Guide to CCT
699	Testing & Assessment Strategies in Education

Education M.S. Degree – Early Childhood Education Concentration

Designed for Flexibility – Online, On-Campus, or Hybrid/ Blended

The M.S. degree with a concentration in Early Childhood Education is designed to promote quality early childhood education for all young children, birth through age twelve, and to improve professional practice in the early childhood community. This non-certification concentration offers coursework in various formats: online, on campus or hybrid/ blended courses.

Our planned program supports a comprehensive understanding of the diverse cognitive, cultural, developmental, and linguistic needs of the early childhood learner. Graduates will be able to work effectively with multicultural populations of young children in a variety of settings and provide instructional opportunities that are adapted to diverse learning styles. In addition, our graduates are trained to use developmentally appropriate practices in early childhood education to create healthy, respectful, nurturing, and challenging learning environments for all young children in their cultural contexts.

PROGRAM REQUIREMENTS

Education M.S. Degree (33 Credits)
Early Childhood Concentration

EDMM 626	Principles of Early Childhood Education (ECE)	3 online
EDMM 657	Developmentally Appropriate ECE Classroom Environments	3 online
EDMM 628	Family and Community Partnerships within ECE	3 online
EDUC 560	Human Growth and Development	3 online
	Total Core Courses	12

The remaining 21 credits will be individually selected with the assistance of the student's advisor.

Education *Sixth Year Certificate of Advanced Study (CAS) in Elementary or Secondary Education*
Remedial Reading and Language Arts

Chair: Patricia Mulcahy-Ernt
Carlson Hall, Room 118
Telephone: (203) 576-4201
Fax: (203) 576-4200
Email: mulcahyp@bridgeport.edu

This 30 credit Sixth Year Certificate of Advanced Study (CAS) degree program at either the Elementary or Secondary level provides extensive course work and experiences in working with students in the field of literacy and language arts. An individual with an appropriate regionally accredited Master's degree may use the 6th Year CAS degree program to achieve teacher certification.

Although the program focuses on literacy for grades 1-12, the candidates elect either an Elementary degree focus or a Secondary degree focus through their field experiences and research. This concentration focuses on working with students in a variety of instructional settings for the purpose of teaching literacy processes, for evaluating students in reading and language arts, and for developing and evaluating literacy programs. Students learn to create appropriate literacy instruction for learners experiencing difficulty in reading and language arts. Upon completion of the coursework, field experiences, and appropriate performance assessments, students may apply for the Connecticut initial educator certificate in Remedial Reading/Remedial Language Arts, 1-12.

Program Goals

The program goals in literacy are adapted from the international Reading Association Standards for reading Professionals - Revised 2010. The goals in Literacy for the Remedial Reading and Remedial Language Arts Program are as follows:

Reading professionals understand the theoretical and evidence-based foundations of reading and writing processes and instruction.

Reading professionals use instructional approaches, materials, and an integrated, comprehensive, balanced curriculum to support learning in reading and writing.

Reading professionals us a variety of assessment tools and practices to plan and evaluate effective reading and writing instruction.

Reading professionals create and engage their students in literacy practices that develop awareness, understanding, respect, and a valuing of differences in our society.

Reading professionals create a literate environment that fosters reading and writing by integrating foundational knowledge, instructional practices, approaches and methods, curriculum materials, and the appropriate use of assessments.

Reading professionals recognize the importance of, demonstrate, and facilitate professional learning and leadership as a career-long effort and responsibility.

Admissions Criteria

A valid Connecticut teaching certificate (or proof of eligibility);

An appropriate regionally accredited Master's degree;

At least two letters of recommendation from persons able to testify to your suitability as a prospective teacher and your potential for graduate-level work;

An essay demonstrating a command of the English language and setting out the reasons for wanting to enroll in the program and emphasizing experience relevant to teaching;

A successful team interview with faculty;

Completion of at least 30 school months of successful classroom teaching experience.

Connecticut's essential skills testing requirements: passing scores in the PRAXIS I exams in Reading, Writing, and Mathematics or an official essential skills test waiver currently meeting this requirement.

In this program students gain extensive preparation in learning to teach students in reading and language arts; to work with learners experiencing difficulty in reading, writing, and literacy-related processes; to assess literacy development; and to develop and evaluate programs that improve literacy processes.

PREREQUISITE REQUIREMENTS* _____ (9 CREDITS)

EDUCATIONAL PSYCHOLOGY – 3 credits (required)

| EDUC 509 | Psychological Foundations in Education | 3 |

CHILDREN'S OR ADOLESCENT LITERATURE – 3 credits (required)

| EDUC 536C | Children's Literature | 3 |
| or EDUC 536J | Adolescent Literature | 3 |

SPECIAL EDUCATION – 3 credits (required)

| EDUC 564 | Education of the Exceptional Student | 3 |

PROFESSIONAL EDUCATION REQUIREMENTS**

READING AND LANGUAGE ARTS - 9 CREDITS (REQUIRED)

EDUC 440C	Methods and Materials in Teaching Language Arts	3
or EDUC 440M/J	Methods and Materials in Teaching Language Arts	3
and EDUC 574	Developmental Reading in the Elementary School	3
and EDUC 575M/J	Reading and Writing in the Content Areas	3

DIAGNOSIS AND REMEDIATION OF READING AND LANGUAGE ARTS DIFFICULTIES – 3 credits (required)

| EDUC 571 | Diagnosis and Intervention of Reading and Language Arts Difficulties | 3 |

TESTS AND MEASUREMENTS – 3 credits (required)

| EDUC 558 | Evaluation of Instructional Outcomes | 3 |

CLINICAL FIELD EXPERIENCES – 7 credits (required)

| EDUC 596 | Field Experience in Reading and Language Arts | 1 |
| EDUC 597 | Practicum in Reading and Language Arts | 6 |

ADDITIONAL PROGRAM REQUIREMENTS _____ (4-12 CREDITS)

SECOND LANGUAGE LEARNING AND ACQUISITION (required as noted)

| EDUC 570 | Instruction for the English Language Learner | 1 |

STATUTORY REQUIREMENTS (required as noted)

| EDUC 511 | Statutory Requirements in Education | 1 |

ADDITIONAL GRADUATE COURSEWORK (required as noted)

| EDUC 573 | Early Literacy | 2 |

FINAL DEGREE REQUIREMENT _____

(CHOOSE ONE OF THE FOLLOWING:)

INDEPENDENT STUDY

| EDUC 668 | Literacy Research Project | 1 |
| EDUC 669 | Sixth Year Project | 1-3 |

THESIS RESEARCH

| EDUC 695 | Advanced Thesis Research — Sixth Year | 2-6 |

| Credits for Certification | 21 |

Students need to complete all requirements on their Planned Programs of study. Students seeking to complete the Sixth Year Degree must complete an additional 9 credits, inclusive of the Final Degree Requirement.

Total Number of Credits:

Sixth Year degree Total Minimum: 30 Credits

Education *Sixth Year Certificate of Advanced Study (CAS) in Elementary or Secondary Education*
Remedial Reading and Language Arts

*With prior written adviser approval these courses may be met by taking undergraduate courses with a grade of a "B" or higher.

**These courses are required for the Sixth Year Certificate Program in Remedial Reading and Remedial Language Arts.

Educational Administration and Supervision *Sixth Year Certificate of Advanced Study (CAS), Intermediate Administrator (092 Certification) Certification Track*

Chair and Director: Gail Prelli
Carlson Hall, Room 101
Telephone: (203) 576-4218
Fax: (203) 576-4200
Email: emargoli@bridgeport.edu

Program Goals

The Educational Leadership with Administration and Supervision Program Goals are adapted from Connecticut State Department of Education's common Core of Leading (2013). The Educational Leadership with Administration and Supervision program at the University of Bridgeport seeks to develop leaders who can accomplish all of the following:

Develop a shared vision for student learning that creates meaning for the people in the organization and infuses purpose into the strategies and standards for actions linked to that vision.

Promote an instructional program, built on high expectations for all learners and conducive to student learning and professional growth, thereby developing a school culture of success for all learners.

Establish positive learning environments by developing trust and credibility through meaningful relationships.

Establish a culture that is open and inclusive, through modeling and expecting ethical and moral behaviors from all.

A student who holds a Master's degree from an accredited college or university may apply to in the Sixth Year program. The Professional Diploma program consists of thirty semester hours.

The Sixth Year Program, leading to the professional Diploma in Educational Leadership with Administration and Supervision, is designed to meet requirements leading to administrator and supervisor certification (092). This Connecticut State Certification enables a candidate to apply for leadership positions other than Superintendent of Schools (093 certification). With the exception of Reading and Language arts, this certification would also include subject area consultant and curriculum coordinator.

Intermediate Administrator (092 Certification) Certification Track Summary of Requirements

(30 SEMESTER HOURS)

CERTIFICATION REQUIRES COURSES IN EACH OF THE FIVE AREAS, AND A TOTAL OF 24 CREDITS BEYOND THE MASTER'S _____

REQUIRED CORE

I. PSYCHOLOGICAL/PEDAGOGICAL
*EDLD 621   Evaluation of School Effectiveness

II. CURRICULUM/PROGRAM MONITORING
*EDLD 651   Curriculum Development

III. SCHOOL ADMINISTRATION
EDLD 618   School Finance (required)
EDLD 619   School Law (required)

IV. PERSONNEL EVALUATION/SUPERVISION
EDLD 652   Supervision: Evaluation/Development

V. CONTEMPORARY EDUCATIONAL PROBLEMS/POLICY MAKING
EDLD 601   Introduction to Education Leadership

Notes:
1. Administrative Internship ED. 681A (3 credits) required
2. CAT Examination – required for 092 certification
3. EDUC 664 Supervision of Programs & Services for students with Exceptionalities (This requirement will be substituted for an elective if the candidate holds appropriate certification Social Work, Speech, Psychology, Special Ed.).
    Must be completed for certification.
4. Certification (092)   = 24 credits
5. 6th Year professional Diploma   = 30 credits

SUGGESTED ELECTIVES (3 CREDITS EACH) ____

EDLD	613	Contemporary Issues in Education Leadership
EDLD	614	Leadership & Management of School Facilities
EDLD	680A	Urban Leadership
EDLD	615	Research & Data Informed Supervision

Electives offered by other departments or colleges, may be substituted with approval by the student's advisor.

Total Semester Hours _____ **30**

Educational Leadership *Doctor of Education Degree*

Program Director: Thomas Christ
Carlson Hall, Room 116
Telephone: (203) 576-4215
Fax: (203) 576-4200
Email: tchrist@bridgeport.edu

The Doctoral program in Educational Leadership at the University of Bridgeport is the first of its kind in Connecticut and has been operating since 1979. It is designed to enhance and improve the effectiveness of public and private organization leaders, school administrators, and researchers. Graduates and current students have held and hold significant positions in state-wide school systems, for-profit, non-profit institutions, colleges, and universities. The advanced graduate curriculum integrates the sound principles of administration, management, organizational psychology, information technology, program evaluation, quantitative, qualitative, action, and mixed research methodologies.

The program is specifically tailored to the working professional and is offered on a part-time basis (two evenings per week) at the U.B. Campus. Consequently, all courses and seminar are conveniently scheduled around the job of the working professional. The successful completion of the program leads to the Doctor of Education degree (Ed.D.).

The Doctoral Program takes into consideration the needs of such personnel in terms of both the content of the curriculum, orientation, and program organization. It is offered at the University of Bridgeport campus easily accessible from New York, New Jersey, and Massachusetts by car, train, or ferry.

The program requires a minimum of four years for completion, including three years of formal study, and a minimum of one year to complete the dissertation. During the first two years, students' typically take one six credit doctoral seminar and one three credit research-evaluation course per semester. Students should take online-hybrid classes during year one and two summers as part of the residency requirement in the program.

1. Summary of Requirements
(62 SEMESTER HOURS)

Education Leadership Strand

EDLD	801	Program Development (6 Credits)
EDLD	804	Constitutional Law (6 Credits)
EDLD	805	Grant Writing, Procurement, and Policy (6 Credits)
EDLD	807	Organization Management (6 Credits)
EDLD	808	Human Relations (6 Credits)

Research and Evaluation Strand

EDLD	811	Intro to Research (3 Credits)
EDLD	812	Quantitative Research (3 Credits)
EDLD	814	Qualitative Research (3 Credits)
EDLD	815	Mixed Methods (3 Credits)
EDLD	816	Action Research Project (3 Credits Repeatable up to 2X)

Dissertation Preparation Strand

EDLD	813	Literature Review (3 Credits)
EDLD	845	Dissertation: Comprehensive Exam (3 Credits)
EDLD	846	Dissertation: Proposal Defense (3 Credits)
EDLD	850	Continuous Dissertation (0 Credits)

Postsecondary Teaching Experience

EDLD	817	Postsecondary Teaching (2 Credits Repeatable up to 4X)

For 092 Certification Add

EDLD	881a	Administrative Internship (3 credits) + CAT Exam
EDLD	864	Special Education for Administrators (3 Credits)

2. Residency

A substantial period of residence must be included in a doctoral program to provide significant faculty-student interaction, opportunities for exposure to and engagement with cognate disciplines and research scholars working in those disciplines, and significant face-to-face peer interaction among graduate students. Residency is established through continuous enrollment, fall, spring, and summer with a minimum of 3 credits per semester. Residency provides the opportunity for a mentor-apprentice relationship between faculty and students and time for in- depth and direct faculty support of students. Thus, the intent of the residency requirement is to ensure that doctoral students contribute to and benefit from the complete spectrum of educational, professional, and enrichment opportunities provided on and off the University of Bridgeport campus.

3. Dissertation Preparation

The dissertation proposal draft is a 12-15 page overview of the student's ideas for their dissertation. The proposal draft which is created in the first year of the program as part of EDLD 811-Introduction to Research, EDLD 812-Quantitive Research, and EDLD-813-Literature Review should provide guidance for the selection of dissertation committee members as well as a basis for further expansion of the dissertation methodology and procedures which occurs in EDLD 814-Qualitaative Research and EDLD 815-Mixed Methods Research. The purpose for the dissertation proposal draft is to state the problem, purpose, research questions, methodology, and procedures to conduct the research project. The proposal draft will include a graphic depiction of the methodology and methods, and a time line for completion of the dissertation proposal including literature review and Human Subject approval. Discussing the research proposal in draft format with a potential committee chair, other potential committee members, and peers will enable the student to obtain advice early in the dissertation process as to the suitability of the topic and as to whether or not the research questions and methodologies are logical, appropriate, and sound.

4. Comprehensive Examination and Dissertation Proposal

All matriculated doctoral students wishing to become doctoral candidates must pass a written comprehensive examination. Passage of the comprehensive exam coincides with the final dissertation proposal. The comprehensive exam will consist of: (a) one research methodological question; (b) one program focus question; and (c) one area of specialization question related to the students' dissertation topic. The questions will be designed by the doctoral faculty and the student to rigorously assess the mastery and synthesis of knowledge garnered during coursework. Further, it is intended to gauge the student's potential for independent dissertation research. Students should take the exam at the conclusion of their third year, after all coursework has been completed. Students will have 30 days to complete the take home comprehensive exam. Each question should be 15 pages with no less than 15 appropriate citations per question representing coursework in the program, and the students' research in their specialization strand. Following APA 6th edition is mandatory!

The dissertation proposal is a required component of the doctoral program, and must be approved for a student to become a doctoral candidate. The student, the student's Chair, and the School of Education expect to see evidence of careful attention to APA 6th style and format in the proposal document. The

Educational Leadership *Doctor of Education Degree*

UB Doctoral Guidelines are derived from standard practices among universities, libraries, and publishers. The student is expected to read and follow the Guidelines throughout the proposal preparation. The proposal includes the student's statement of a research problem and the chosen method of investigating it. The proposal is the first step toward completion of the dissertation, which is an original contribution to one's field of study. The study may be applied research; it may be experimental, quasi-experimental, or non-experimental in its design; it may include quantitative, qualitative, action, mixed or critical methodology. Writing the dissertation proposal begins immediately upon entering the Ed.D. program guided by a unique sequence of six 3-credit courses (EDLD: 811, 812, 813, 814, 815, 816). It is essential that the student be capable of discussing the theoretical basis of a proposed study and the specific methodologies and is approved by IRB and the dissertation committee before the student begins formal data collection. A proposal draft should contain the following headings:

5. Dissertation-Doctoral Candidacy

Once the student has successfully passed the Comprehensive Examination and completed the Dissertation Proposal, he or she is eligible to apply to be a Doctoral Candidate. The student should submit the form "Admission to Doctoral Candidacy" to the Director. This designation will be conveyed to the student by an official letter from the School of Education and/or the Department of Educational Leadership. Doctoral Candidacy allows the student to register for dissertation advising EDLD 850 which is a 0 credit course but is deemed to be full time. A student must be a candidate for at least two semesters prior to the granting of the degree. Student may not, unless granted a waiver, defend the dissertation during the semester immediately following the semester during which he or she completed the proposal. The purpose of this requirement is to assure a minimal lapse of time for effective work on the dissertation after acquisition of the basic competence and after delineation and approval of the research problem and methodology. Once students are advanced to candidacy they must be enrolled in EDLD 850 continuously for dissertation advising and supervision (fall, spring and summer semesters) until graduation. If the student is not advanced to candidacy within six years from the time of admission to the doctoral program, the student should be dismissed from the program. Each student has a three-member dissertation committee, the director of the Ed.D. Program, and the Dean of School of Education.

Note: Completion of Doctoral Degree

The degree must be completed within seven years of the date from which the student started coursework in the doctoral program. In exceptional cases, the department may recommend that the Dean grant an extension of this limit.