

QCC to WPI School of Engineering Pathways

Aerospace Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I	4	CH 1010 Chemical Properties, Bonding and Forces	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
PH 107 General Physics II: Electricity & Magnetism	4	PH 1120 General Physics – Electricity and Magnetism	1/3
ERG 211 Introduction to Materials Science	3	ES 2001 Introduction to Materials Science	1/3
ERG 223 Thermodynamics	3	ES 3001 Introduction to Thermodynamics	1/3
Total credits	39	Total units	11/3

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Architectural Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I	4	CH 1010 Chemical Properties, Bonding and Forces	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
PHY 107 General Physics II: Electricity & Magnetism	4	PH 1120 General Physics – Electricity and Magnetism	1/3
ERG 223 Thermodynamics	3	ES 3001 Introduction to Thermodynamics	1/3
Total credits	36	Total units	10/3

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Biomedical Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I	4	CH 1010 Chemical Properties, Bonding and Forces*	1/3
CHM 124 Principles of Chemistry for Engineers II	4	CH 1020 Chemical Reactions*	1/3
BTT Introduction to Biotechnology	3	BB 1035 Biotechnology	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
PHY 107 General Physics II: Electricity & Magnetism	4	PH 1120 General Physics – Electricity and Magnetism	1/3
ERG 280 Engineering Computation and Modeling	3	BME 1004 Introduction to Programming in MATLAB	1/3
ERG 211 Introduction to Materials Science	3	ES 2001 Introduction to Materials Science	1/3
Total credits	46	Total units	13/3

*Completion of CHM 123 and CHM 124 with acceptable grades will provide credit for CH 1010, CH 1020, and CH 1030

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Chemical Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I	4	CH 1010 Chemical Properties, Bonding and Forces*	1/3
CHM 124 Principles of Chemistry for Engineers II	4	CH 1020 Chemical Reactions*	1/3
CH 201 Organic Chemistry I	4	CH 2310 Organic Chemistry I+	1/3
CH 202 Organic Chemistry II	4	CH 2320 Organic Chemistry II+	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
PHY 107 General Physics II: Electricity & Magnetism	4	PH 1120 General Physics – Electricity and Magnetism	1/3
Total credits	45	Total units	12/3

*Completion of CHM 123 and CHM 124 with acceptable grades will provide credit for CH 1010, CH 1020, and CH 1030

+ Completion of CHM 201 and CHM 202 with acceptable grades will provide credit for CH 2310, CH 2320, and CH 2360

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Civil Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I	4	CH 1010 Chemical Properties, Bonding and Forces*	1/3
CHM 124 Principles of Chemistry for Engineers II	4	CH 1030 Kinetics, Equilibrium and Thermodynamics*	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
BIO 100 Principles of Human Biology OR BIO 101 General Biology: Core Concepts OR BIO 107 Principles of Biology I OR BTT 101 Introduction to Biotechnology	4 3 (BTT)	BB 1025 Human Biology OR BB 1000 Biology Elective OR BB 1001 Introduction to Biology OR BB 1035 Biotechnology	1/3
ERG 221 Statics	3	ES 2501 Introduction to Static Systems	1/3
ERG 211 Introduction to Materials Science	3	ES 2001 Introduction to Materials Science	1/3
Total credits	38-39	Total units	12/3

*Completion of CHM 123 and CHM 124 with acceptable grades will provide credit for CH 1010, CH 1020, and CH 1030

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Electrical & Computer Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I OR BIO 100 Principles of Human Biology OR BIO 101 General Biology: Core Concepts OR BIO 107 Principles of Biology I OR BTT 101 Introduction to Biotechnology	4 3 (BTT)	CH 1010 Chemical Properties, Bonding and Forces OR BB 1025 Human Biology OR BB 1000 Biology Elective OR BB 1001 Introduction to Biology OR BB 1035 Biotechnology	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
PHY 107 General Physics II: Electricity & Magnetism	4	PH 1120 General Physics – Electricity and Magnetism	1/3
CSC 101 Introduction to Programming Using Python OR CSC 108 Computer Science I	3	CS 1004 Introduction to Programming for Non-Majors OR CS 1101 Introduction to Program Design	1/3
Consult TES for additional math, natural science, or engineering science	3	Consult TES for equivalents for additional math, basic science, or engineering science	1/3
Total credits	39	Total units	11/3

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Environmental Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I	4	CH 1010 Chemical Properties, Bonding and Forces*	1/3
CHM 124 Principles of Chemistry for Engineers II	4	CH 1030 Kinetics, Equilibrium and Thermodynamics*	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
BIO 107 Principles of Biology I	4	BB 1001 Introduction to Biology	1/3
ERG 221 Statics	3	ES 2501 Introduction to Static Systems	1/3
ERG 211 Introduction to Materials Science OR ERG 225 Strength of Materials	3	ES 2001 Introduction to Materials Science OR ES 2502 Stress Analysis	1/3
Total credits	39	Total units	12/3

*Completion of CHM 123 and CHM 124 with acceptable grades will provide credit for CH 1010, CH 1020, and CH 1030

+ Completion of CHM 201 and CHM 202 with acceptable grades will provide credit for CH 2310, CH 2320, and CH 2360

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Mechanical Engineering

Course	Credits	Course	Units
CHM 123 Principles of Chemistry for Engineers I	4	CH 1010 Chemical Properties, Bonding and Forces	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
PHY 107 General Physics II: Electricity & Magnetism	4	PH 1120 General Physics – Electricity and Magnetism	1/3
CSC 101 Introduction to Programming Using Python OR CSC 108 Computer Science I OR ERG 280 Engineering Computation and Modeling	3	CS 1004 Introduction to Programming for Non-Majors OR CS 1101 Introduction to Program Design OR ME 2312 Introduction to Computational Solutions for Engineering Problems	1/3
ERG 211 Introduction to Materials Science	3	ES 2001 Introduction to Materials Science	1/3
ERG 221 Statics	3	ES 2501 Introduction to Static Systems	1/3
Total credits	42	Total units	12/3

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024

Robotics Engineering

Course	Credits	Course	Units
CSC 108 Computer Science I	4	CS 1101 Introduction to Program Design	1/3
CSC 109 Computer Science II	4	CS 2102 Object-Oriented Design Concepts	1/3
CSC 212 Introduction to Software Engineering	4	CS 3733 Software Engineering	1/3
ENG 101 Composition I	3	WR 1010 Elements of Writing	1/3
ENG 102 Composition II	3	EN 1251 Introduction to Literature	1/3
MAT 233 Calculus I	4	MA 1021 Calculus I	1/3
MAT 234 Calculus II	4	MA 1022** Calculus II	1/3
MAT 235 Calculus III	4	MA 1024*** Calculus IV	1/3
MAT 238 Differential Equations	3	MA 2051 Ordinary Differential Equations	1/3
PHY 105 Physics I: Newtonian Mechanics	4	PH 1110 General Physics – Mechanics	1/3
PHY 107 General Physics II: Electricity & Magnetism	4	PH 1120 General Physics – Electricity and Magnetism	1/3
ERG 221 Statics	3	ES 2501 Introduction to Static Systems	1/3
Total credits	42		12/3

** Completion of MAT 233 and MAT 234 with acceptable grades will provide credit for MA 1021, MA 1022, and MA 1023

***Completion of MAT 233, MAT 234, and MAT 235 with acceptable grades will provide credit for MA 1021, MA 1022, MA 1023, and MA 1024