CCV STEM Certificate to Vermont State University (VTSU) Engineering Programs AE.EET, AS.AET, BS.AET, BS.EET, BS.ELM, AE.CET, AE.MEC, BS.MEC

Catalog Year: 2025-26

This transfer pathway will help you plan courses at the Community College of Vermont (CCV) that will meet course specific requirements at VTSU.

- CCV and VTSU are both a part of the Vermont State College System (VSCS). Students have one common VSCS transcript. As such, courses taken at CCV are not considered transfer credit.
- Join this transfer pathway by completing the CCV to VTSU Pathways Form.
- Students who have completed an associate degree at the Community College of Vermont will have completed all associate level general education requirements at VTSU.
- VTSU accepts all general education credits and associate's level VSCS graduation standards from CCV.
- Transfer courses from regionally accredited institutions will be accepted if grades are C- or better.

CCV STEM Certificate	VTSU
INT 1050 Dimensions of Self & Society	General Education Requirement - VTSU CNX 1010 Connections Seminar 1
ENG 1061 English Composition	General Education: Introductory Written Expression - VSCS ENG 1061 English Composition
MAT 1230 College Algebra	General Education: Mathematics - VSCS MAT 1230 College Algebra
MAT 1330 Pre-Calculus	MAT 1360 Precalculus with Applications
PHY 1041 Physics I	PHY 1051 Physics I
PHY 1042 Physics II	PHY 1052 Physics II
Technical Electives: 6-8 credits Choose: MAT 1531 Calculus I MAT 2021 Statistics I	 MAT 1531 Calculus I MAT 2021 Statistics I
Electives: 3-4 credits Choose: Course that fulfills VSCS General Education requirement in Arts & Aesthetics, Humanistic Perspectives, or Social Science *(if interested in Architectural programs select Social Science course)*	VSCS General Education Course
Total credits: 31	All credits will count towards VTSU bachelor's degree programs detailed below.

Architectural Engineering Technology
Additional courses at VTSU for AS.AET degree:
ARE 1000 ARE First-Year Seminar 1 cr (Course may be waived if student has prior architectural course work or industry experience)
ARE 1011 Into to Construction Draw Practices 3 cr

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ARE 1212 Construction Materials & Methods 5 cr
ARE 1214 Designing & Detailing for Construction 2 cr
ARE 1220 Architectural History 3 cr, also fulfills VSCS Arts & Aesthetics general education requirement
ARE 2022 Building Information Modeling 3 cr
ARE 2031 Environmental Systems I 3 cr
ARE 2032 Environmental Systems II 3 cr
ARE 2051 Architectural Design I 3 cr
ARE 2052 Architectural Design II 3 cr
ARE 2720 Architectural Seminar 1 cr
CET 2040 Statics & Strength or Materials 4 cr
CET 2120 Structural Design 3 cr
ENG 2080 Technical Writing 3 cr
VSCS Gen Ed Digital & Comp Lit course 3 cr
Additional Credits: 43

Architectural Engineering Technology
Additional courses at VTSU for BS.AET degree
Complete AS.AET courses listed above
ARE 2040 Construction Practices, 4 cr
ARE 3010 Design Systems Integration 3 cr
ARE 3020 Structural Analysis 3 cr
ARE 3030 Steel Structures Design 4 cr
ARE 3040 Electrical/Lighting Systems 3 cr
ARE 3050 Fund of Fluids & Thermodynamics 4 cr
ARE 4010 Concrete Structures Design 3 cr
ARE 4020 Architectural Eng Management 3 cr
ARE 4030 HVAC Systems 5 cr
ARE 4040 Plumbing Systems 3 cr
ARE 4050 FE Exam Survey 1 cr
ARE 4720 ARE Senior Project 4 cr
ELT 2071 Basic Electricity 3 cr
CHE 1031 Gen Chemistry I 4 cr
MAT 2532 Calculus II 4 cr
Technical elective 3 cr
VSCS Gen Ed Humanistic Perspectives course 3 cr
Connections 3^
Additional Credits: 57

Electrical Engineering Technology
Additional Courses at VTSU for AE.EET degree
CIS 2025 C Programming 3 cr, course also counts as VSCS Digital & Comp Literacy General Education Requirement
ELT 1015 Intro to Engineering 1 cr
ELT 1031 Electrical Circuits I 4 cr

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ELT 1032 Electrical Circuits II 4 cr
ELT 1110 Intro to Digital Circuits 3 cr
ELT 2015 Intro to Projects 1 cr
ELT 2041 Electronic Circuits I 4 cr
ELT 2042 Electronic Circuits II 4 cr
ELT 2050 Microcontroller Techniques I 4 cr
ELT 2130 Industrial Electronics 4 cr
ELT 2720 Electrical Project 2 cr
ENG 2080 Technical Writing 3 cr
VSCS Gen Ed Social Science course *(if not completed at CCV),* VSCS Humanistic Perspectives OR Arts & Aesthetics course *(if not taken at CCV)* 3 cr
Additional Credits: 40

Electrical Engineering Technology
Additional Courses at VTSU for BS.EET degree
Complete courses for AE.EET degree above
ELM 3015 Sensors & Instrumentation 3 cr
ELM 4015 Electromechanical Power Systems 3 cr
ELM 4231 Control Systems I 3 cr
ELM 4232 Control Systems II 3 cr
ELM 4701 Senior Project I 2 cr
ELM 4702 Senior Project II 3 cr
ELT 2061 Electromechanical Systems I 4 cr
Take either: ELT 3010 Digital Circuits II 3 cr *or* ELT 3070 Semiconductor Terminology 3 cr
ELT 3050 Microcontroller Techniques II 4 cr
ELT 3053 Electronics III 4 cr
ELT 3110 Electronic & Data Communications 3 cr
ELT 4020 Digital Signal Processing 3 cr
MAT 2532 Calculus II 4 cr
MAT 3170 Applied Math for Engineers 3 cr
VSCS Humanistic Perspective *or* Arts & Aesthetics course *(students in BS must complete 1 course in each category)*
Technical electives, at least one course must be at the 2000 level or above 6 cr
Connections 3^
Additional credits: 51

Electromechanical Engineering
Additional courses at VTSU for BS.ELM.EET or BS.ELM.MEC degree (students choose one concentration)
Complete courses for AE.EET degree above
Complete core courses: ELM 3015 Sensors & Instrumentation 3 cr
ELM 4015 Electromechanical Power Systems 3 cr
ELM 4231 Control Systems I 3 cr

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ELM 4232 Control Systems II 3 cr
ELM 4701 ECET Senior Project I 2 cr
ELM 4702 ECET Senior Project II 3 cr
ELT 2061 Electromechanical Systems I 4 cr
ELT 3110 Electronic & Data Communications 3 cr
MAT 2532 Calculus II 4 cr
MAT 3170 Applied Math for Engineering 3 cr
VSCS Humanistic Perspective *or* Arts & Aesthetics course *(students in BS must complete 1 course in each category)*
Connections 3^
Technical electives, at least one course must be at the 2000 level or above 6 cr
Electrical Concentration BS.ELM.EET- additional course requirements (students choose one concentration)
MEC 1011 Design Communication I 2 cr
MEC 1020 Manufacturing Processes I 2 cr
MEC 2010 Fluid Mechanics & Fluid Systems 3 cr
MEC 2035 Statics & Strengths of Materials 4 cr
MEC 2065 Kinematics &Dynamics 3 cr
MEC 2071 Machine Design 2 cr
Additional credits BS.ELM.EET 56 cr
Mechanical Concentration BS.ELM.MEC- additional course requirements (students choose one concentration)
CIS 2025 C Programming 3 cr
ELT 1032 Electrical Circuits II 4 cr
ELT 2041 Electronic Circuits I 4 cr
ELT 2050 Microcontroller Techniques I 4 cr
Additional credits: 55

Civil and Engineering Technology
Additional courses at VTSU for AE.CET degree
CET 1000 CET Orientation 1 cr
CET 1011 Surveying I 3 cr
CET 1020 Engineering Materials 3 cr
CET 1031 Engineering & Survey Computer App I 2 cr
CET 1032 Engineering & Survey Computer App II 2 cr
CET 2012 Surveying II 4 cr
CET 2020 Hydraulics & Drainage 3 cr
CET 2030 Environmental Engineering & Science 3 cr
CET 2040 Statics & Strength of Materials 4 cr
CET 2050 Civil & Engineering Design 4 cr
CET 2110 Mechanics of Soils 3 cr
CET 2120 Structural Design 3 cr
ENG 2080 Technical Writing 3 cr

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General Education: Arts & Aesthetics of Humanistic Perspective (if not taken at CCV) 3 cr
General Education: Social Science (if not taken at CCV) 3 cr
Additional credits: 41-44

Mechanical Engineering
Additional courses at VTSU for AE.MEC degree
MEC 1010 Mechanical Engineering 1 cr
MEC 1011 Design Communication I 2 cr
MEC 1012 Design Communication II 2 cr
MEC 1020 Manufacturing Process I 2 cr
MEC 1040 Materials Science & Engineering 3 cr
MEC 2010 Fluid Mechanics & Fluid Systems 3 cr
MEC 2035 Statics & Strengths of Materials 4 cr
MEC 2040 Computer-Aided Technology 2 cr
MEC 2050 Thermodynamics & Heat Transfer 4 cr
MEC 2065 Kinematics & Dynamics 3 cr
MEC 2720 Mechanical Projects 3 cr
ELT 2071 Basic Electricity 3 cr
ELT 2072 Electronics 3 cr
ENG 2080 Technical Writing 3 cr
General Education: (if not taken at CCV) one Social Science course and one course in Arts & Humanities OR Humanistic Perspectives 3-6 cr
Additional credits: 45-48

Mechanical Engineering
Additional courses at VTSU for BS.MEC (General Option) degree or BS.MEC.MET (concentration in Manufacturing) degree or BS.MEC.REN (concentration in Renewable Energy)
MEC 1010 Mechanical Engineering 1 cr
MEC 1011 Design Communication I 2 cr
MEC 1012 Design Communication II 2 cr
MEC 1020 Manufacturing Process I 2 cr
MEC 1040 Materials Science & Engineering 3 cr
MEC 2010 Fluid Mechanics & Fluid Systems 3 cr
MEC 2035 Statics & Strengths of Materials 4 cr
MEC 2040 Computer-Aided Technology 2 cr
MEC 2050 Thermodynamics & Heat Transfer 4 cr
MEC 2065 Kinematics & Dynamics 3 cr
MEC 2720 Mechanical Projects 3 cr
ELT 2071 Basic Electricity 3 cr
ELT 2072 Electronics 3 cr

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MAT 2532 Calculus II 4 cr
CHE 1031 Gen Chemistry I 4 cr
MEC 3120 Automation & Controls 3 cr
ARE 4020 Engineering Management 3 cr
General Education: (if not taken at CCV) one course each in Social Sciences, Arts & Humanities, and Humanistic Perspectives 6-9 credits
ENG 2080 Technical Writing 3 cr
All students complete one 3 cr capstone course: MEC 4721 Manufacturing Capstone, MEC 4722 Renewable Energy Project Capstone, or ARE 4720 Architectural Engineering Senior Project
Subtotal 70-73 cr, plus students complete either General Options or one concentration below
General Option – 24 credits; Total for BS.MEC degree 125 credits
15 credits in MEC courses, 3000 level and above
9 credits in MEC, ARE, CIS, CET, ELM, CHE, BIO, PHY, ENV, or MAT, minimum of 6 credits at 3000 level and above
Manufacturing Concentration – 27 credits; Total for BS.MEC.MET degree 128 credits
MEC 1060 Metrology & Inspection Techniques 3 cr
MEC 1180 Welding Processes I 3 cr
MEC 3021 Manufacturing Processes II 3 cr
MEC 3031 Materials Processes 3 cr
MEC 3041 Advanced CNC Machining 3 cr
MEC 3121 Additive Manufacuring 3 cr
MEC 4010 Lean Manufacturing 3 cr
MEC 4020 Quality Assurance 3 cr
MEC 4220 Product Design & Production 3 cr
Renewable Energy Concentration- 33 credits; Total for BS.MEC.REN degree 134 credits
ENV 1080 Environmental Science 4 cr
ENV 2110 Energy Systems and Sustainability 3 cr
ARE 2031 Environemtal Systems I 3 cr
ARE 2032 Environmental Systems II 3 cr
MEC 2150 Solar Photovoltaic Technology 3 cr
MEC 3010 Wind Power 3 cr
MEC 3040 Bioenergy 3 cr
MEC 3170 Renewable Energy Heating 3 cr
ARE 4030 HVAC Systems 3 cr
MEC 4120 Renewable Energy Modeling 3 cr

**Students who have graduated from CCV or who are transferring with 30 credits or more and have previously completed an intermediate research and writing intensive course are exempt from VTSU Connections Seminar 2.*

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^Connections 3 seminar is not required for transfer students in the 23-24, 24-25, or 25-26 catalog. Transfer students should consult with their VTSU advisor on course planning and may find this course beneficial from an academic and/or career perspective.

More information about these VTSU programs can be found at:

Architectural Engineering Technology (AS.AET):
https://catalog.vermontstate.edu/preview_program.php?catoid=15&poid=3682&returnto=866

Architectural Engineering Technology (BS.AET):
https://catalog.vermontstate.edu/preview_program.php?catoid=15&poid=3677&returnto=866

Civil & Environmental Engineering Technology (AE.CET)
https://catalog.vermontstate.edu/preview_program.php?catoid=15&poid=3597&returnto=859

Electrical Engineering Technology (AE.EET)
https://catalog.vermontstate.edu/preview_program.php?catoid=15&poid=3697&returnto=866

Electrical Engineering Technology (BS.EET)
https://catalog.vermontstate.edu/preview_program.php?catoid=15&poid=3694&returnto=866
Electromechanical Engineering (BS)
https://catalog.vermontstate.edu/preview_program.php?catoid=15&poid=3698&returnto=866

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