

**Dual Degree
AE & ME Degree**

Applies to New Students Admitted Fall 2010 to Fall 2012
Modified Nov. 2012

AE Curriculum = Black

Extra courses from ME curriculum = Red

CHEM 124 – Principles of Chemistry I (4)
CS 104 – Introduction to Computer Programming I (2)
MATH 151 – Calculus I (5)
MATH 152 – Calculus II (5)
MATH 251 – Multivariate and Vector Calculus (4)
MATH 252 – Introduction to Differential Equations (4)
PHYS 123 – General Physics I: Mechanics (4)
PHYS 221 – General Physics II: Electricity & Magnetism (4)
MS 201 – Materials Science (3)
MMAE 100 – Introduction to the Profession (3)
MMAE 200 – Introduction to Mechanics (3)
MMAE 202 – Mechanics of Solids II (3)
MMAE 232 – Design for Innovation (3)
MMAE 304 – Mechanics of Aerostructures or MMAE 302 – Mechanics of Solids III (3)
MMAE 311 – Compressible Flow (3)
MMAE 305 – Dynamics (3) (preferred) or PHYS 224 – General Physics III for Engineers
MMAE 312 – Aerodynamics of Aerospace Vehicles (3)
MMAE 313 – Fluid Mechanics without lab (3)
MMAE 315 – Aerospace Lab I or MMAE 319 – Mechanical Lab I (4)
MMAE 320 – Thermodynamics (3)
MMAE 321 – Applied Thermodynamics (3)
MMAE 323 – Heat & Mass Transfer without Lab (3)
MMAE 332 – Design of Machine Elements (3)
MMAE 350 – Computational Mechanics (3)
MMAE 372 – Aerospace Materials Lab (3)
MMAE 410 – Aircraft Flight Mechanics (3)
MMAE 411 – Spacecraft Dynamics (3)
MMAE 412 – Spacecraft Design I or MMAE 414 – Aircraft Design I (3)
MMAE 413 – Spacecraft Design II or MMAE 416 – Aircraft Design II (3)
MMAE 415 – Aerospace Lab II (4)
MMAE 419 – Mechanical Lab II (4)
MMAE 432 – Design of Mechanical Systems (3)
MMAE 433 – Design of Thermal Systems (3)
MMAE 443 – Systems Analysis and Control (3)
MMAE 445 – Computer-Aided Design (3)
MMAE 452 – Aerospace Propulsion (3)
MMAE 485 – Manufacturing Processes (3)
IPRO I (3)
IPRO II (3)
7 x Hum/SS (21)
Full AE program = 127 credits
Full ME program = 127 credits
Dual degree program = 15 credits more than original single degree = 142 credits
AE electives covered with ME courses = 6 credits
Extra ME courses = 28 credits
121 AE + 28 ME = 149 credits

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Modified Nov. 2012

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CHEM 124 – Principles of Chemistry I (4)
CS 104 – Introduction to Computer Programming I (2)
MATH 151 – Calculus I (5)
MATH 152 – Calculus II (5)
MATH 251 – Multivariate and Vector Calculus (4)
MATH 252 – Introduction to Differential Equations (4)
PHYS 123 – General Physics I: Mechanics (4)
PHYS 221 – General Physics II: Electricity & Magnetism (4)
MS 201 – Materials Science (3)
MMAE 100 – Introduction to the Profession (3)
MMAE 200 – Introduction to Mechanics (3)
MMAE 202 – Mechanics of Solids II (3)
MMAE 232 – Design for Innovation (3)
MMAE 304 – Mechanics of Aerostructures or MMAE 302 – Mechanics of Solids III (3)
MMAE 311 – Compressible Flow (3)
MMAE 305 – Dynamics (3)
MMAE 312 – Aerodynamics of Aerospace Vehicles (3)
MMAE 313 – Fluid Mechanics without lab (3)
MMAE 315 – Aerospace Lab I or MMAE 319 – Mechanical Lab I (4)
MMAE 320 – Thermodynamics (3)
MMAE 321 – Applied Thermodynamics (3)
MMAE 323 – Heat & Mass Transfer without Lab (3)
MMAE 332 – Design of Machine Elements (3)
MMAE 350 – Computational Mechanics (3)
MMAE 372 – Aerospace Materials Lab (3)
MMAE 410 – Aircraft Flight Mechanics (3)
MMAE 411 – Spacecraft Dynamics (3)
MMAE 412 – Spacecraft Design I or MMAE 414 – Aircraft Design I (3)
MMAE 413 – Spacecraft Design II or MMAE 416 – Aircraft Design II (3)
MMAE 415 – Aerospace Lab II (4)
MMAE 419 – Mechanical Lab II (4)
MMAE 432 – Design of Mechanical Systems (3)
MMAE 433 – Design of Thermal Systems (3)
MMAE 443 – Systems Analysis and Control (3)
MMAE 445 – Computer-Aided Design (3)
MMAE 452 – Aerospace Propulsion (3)
MMAE 485 – Manufacturing Processes (3)
IPRO I (3)
IPRO II (3)
7 x Hum/SS (21)
Full AE program = 127 credits
Full ME program = 127 credits
Dual degree program = 15 credits more than original single degree = 142 credits
AE electives covered with ME courses = 6 credits
Extra ME courses = 28 credits
121 AE + 28 ME = 149 credits

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**Dual Degree
AE & MSE Degree**
Applies to New Students Admitted Fall 2010 to Fall 2012
Modified Nov. 2012

AE curriculum = Black

Extra courses from MSE curriculum = Red

CHEM 124 – Principles of Chemistry I (4)
CS 104 – Introduction to Computer Programming I (2)
MATH 151 – Calculus I (5)
MATH 152 – Calculus II (5)
MATH 251 – Multivariate and Vector Calculus (4)
MATH 252 – Introduction to Differential Equations (4)
PHYS 123 – General Physics I: Mechanics (4)
PHYS 221 – General Physics II: Electricity & Magnetism (4)
PHYS 224 – General Physics III for Engineers (3) or MMAE 305 – Dynamics (3)
MS 201 – Materials Science (3)
MMAE 100 – Introduction to the Profession (3)
MMAE 200 – Introduction to Mechanics (3) *
MMAE 202 – Mechanics of Solids II (3)
MMAE 304 – Mechanics of Aerostructures (3)
MMAE 311 – Compressible Flow (3)
MMAE 312 – Aerodynamics of Aerospace Vehicles (3)
MMAE 313 – Fluid Mechanics without lab (3)
MMAE 315 – Aerospace Lab I (4)
MMAE 320 – Thermodynamics (3)
MMAE 350 – Computational Mechanics (3)
MMAE 365 – Structure & Properties of Materials I (3)
MMAE 370 – Materials Lab I (3)
MMAE 372 – Aerospace Materials Lab (3)
MMAE 410 – Aircraft Flight Mechanics (3)
MMAE 411 – Spacecraft Dynamics (3)
MMAE 412 – Spacecraft Design I or MMAE 414 – Aircraft Design I (3)
MMAE 413 – Spacecraft Design II or MMAE 416 – Aircraft Design II (3)
MMAE 415 – Aerospace Lab II (4)
MMAE 443 – Systems Analysis and Control (3)
MMAE 452 – Aerospace Propulsion (3)
MMAE 463 – Structure & Properties of Materials II (3)
MMAE 465 – Electrical, Magnetic, & Optical Properties of Materials (3)
MMAE 470 – Introduction to Polymer Science (3)
MMAE 472 - Advanced Aerospace Materials (3)
MMAE 476 – Materials Lab II (3)
IPRO I (3)
IPRO II (3)
7 x Hum/SS (21)
Full AE program = 127 credits
Full MSE program credits = 126 credits
Dual degree program = 15 credits more than original single degree = 142
Extra MSE courses = 21 credits
Elective credits used for MSE courses = 6
127 (AE) + 15 (MSE) = 142 credits

Notes:

* MMAE 201 (Mechanics of Solids I) plus MMAE 305 (Dynamics) will count as MMAE 200. Students that have already taken MMAE 201 must also take MMAE 305.

** MMAE 468 (Introduction to Ceramic Materials) plus MMAE 482 (Composites) will count as MMAE 472 (Advanced Aerospace Materials)

MMAE 485 is not required for the dual AE/MSE degree, as much of the material is covered in MMAE 472.

**Dual Degree
AE & MSE Degree**
Applies to New Students Admitted Fall 2012 and after
Modified Nov. 2012

AE curriculum = Black

Extra courses from MSE curriculum = Red

CHEM 124 – Principles of Chemistry I (4)
CS 104 – Introduction to Computer Programming I (2)
MATH 151 – Calculus I (5)
MATH 152 – Calculus II (5)
MATH 251 – Multivariate and Vector Calculus (4)
MATH 252 – Introduction to Differential Equations (4)
PHYS 123 – General Physics I: Mechanics (4)
PHYS 221 – General Physics II: Electricity & Magnetism (4)
MS 201 – Materials Science (3)
MMAE 100 – Introduction to the Profession (3)
MMAE 200 – Introduction to Mechanics (3)
MMAE 202 – Mechanics of Solids II (3)
MMAE 304 – Mechanics of Aerostructures (3)
MMAE 305 – Dynamics (3)
MMAE 311 – Compressible Flow (3)
MMAE 312 – Aerodynamics of Aerospace Vehicles (3)
MMAE 313 – Fluid Mechanics without lab (3)
MMAE 315 – Aerospace Lab I (4)
MMAE 320 – Thermodynamics (3)
MMAE 350 – Computational Mechanics (3)
MMAE 365 – Structure & Properties of Materials I (3)
MMAE 370 – Materials Lab I (3)
MMAE 372 – Aerospace Materials Lab (3)
MMAE 410 – Aircraft Flight Mechanics (3)
MMAE 411 – Spacecraft Dynamics (3)
MMAE 412 – Spacecraft Design I or MMAE 414 – Aircraft Design I (3)
MMAE 413 – Spacecraft Design II or MMAE 416 – Aircraft Design II (3)
MMAE 415 – Aerospace Lab II (4)
MMAE 443 – Systems Analysis and Control (3)
MMAE 452 – Aerospace Propulsion (3)
MMAE 463 – Structure & Properties of Materials II (3)
MMAE 465 – Electrical, Magnetic, & Optical Properties of Materials (3)
MMAE 470 – Introduction to Polymer Science (3)
MMAE 472 - Advanced Aerospace Materials (3)
MMAE 476 – Materials Lab II (3)
IPRO I (3)
IPRO II (3)
7 x Hum/SS (21)
Full AE program = 127 credits
Full MSE program credits = 126 credits
Dual degree program = 15 credits more than original single degree = 142
Extra MSE courses = 21 credits
Elective credits used for MSE courses = 6
127 (AE) + 15 (MSE) = 142 credits

Notes:

MMAE 485 is not required for the dual AE/MSE degree, as much of the material is covered in MMAE 472.

**Dual Degree
ME & MSE**

Applies to New Students Admitted Fall 2010 & After

ME curriculum = Black

Extra courses from MSE curriculum = Red

CHEM 124 – Principles of Chemistry I (4)
CS 104 – Introduction to Computer Programming I (2)
MATH 151 – Calculus I (5)
MATH 152 – Calculus II (5)
MATH 251 – Multivariate and Vector Calculus (4)
MATH 252 – Introduction to Differential Equations (4)
PHYS 123 – General Physics I: Mechanics (4)
PHYS 221 – General Physics II: Electricity & Magnetism (4)
MS 201 – Materials Science (3)
MMAE 100 – Introduction to the Profession (3)
MMAE 200 – Introduction to Mechanics (3)
MMAE 202 – Mechanics of Solids II (3)
MMAE 232 – Design for Innovation (3)
MMAE 302 – Mechanics of Solids III (3)
MMAE 305 – Dynamics (3)
MMAE 313 – Fluid Mechanics without lab (3)
MMAE 315 – Mechanical Lab I (4)
MMAE 320 – Thermodynamics (3)
MMAE 321 – Applied Thermodynamics (3)
MMAE 323 – Heat & Mass Transfer without Lab (3)
MMAE 332 – Design of Machine Elements (3)
MMAE 350 – Computational Mechanics (3)
MMAE 365 – Structure & Properties of Materials I (3)
MMAE 370 – Materials Lab I (3)
MMAE 419 – Mechanical Lab II (4)
MMAE 432 – Design of Mechanical Systems (3)
MMAE 433 – Design of Thermal Systems (3)
MMAE 443 – Systems Analysis and Control (3)
MMAE 445 – Computer-Aided Design (3)
MMAE 463 – Structure & Properties of Materials II (3)
MMAE 465 – Electrical, Magnetic, & Optical Properties of Materials (3)
MMAE 470 – Introduction to Polymer Science (3)
MMAE 472 – Advanced Aerospace Materials (3)
MMAE 476 – Materials Lab II (3)
MMAE 485 – Manufacturing Processes (3)
IPRO I (3)
IPRO II (3)
7 x Hum/SS (21)
Full ME program = 127 credits
Full MSE program credits = 126 credits
Dual degree program = 15 credits more than original single degree = 142
Free electives covered with MSE courses = 6 credits Extra MSE courses = 21 credits
121 ME + 21 MSE = 142 credits

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