

## Manufacturing Engineering: Railway Specialization 2025-2026

Year	Course	Course	Course	Course	Course	Course
1-1	COMM 1050U Technical Communications	ENGR 1015U Introduction to Engineering	MATH 1010U Calculus I	MATH 1850U Linear Algebra for Engineers	PHY 1010U Physics I	
1-2	CHEM 1800U Chemistry for Engineers (Credit restrictions: CHEM 1010U/CHEM 1020U/CHEM 1110U)	ENGR 1025U Engineering Design (ENGR 1015U)	ENGR 1200U Introduction to Programming for Engineers (Credit Restriction: INFR 1100U)	MATH 1020U Calculus II (MATH 1010U)	PHY 1020U Physics II (PHY 1010U)	SSCI 1470U Impact of Science and Technology on Society
2-1	MANE 2220U Structure and Properties of Materials (CHEM 1800U)	MATH 2860U Differential Equations for Engineers (MATH 1020U, Coreq: MATH 1850U)	MECE 2230U Statics (MATH 1020U, PHY 1010U)	MECE 2310U Concurrent Engineering and Design (ESNS 1200U or ENGR 1025U)	MECE 2640U Thermodynamics and Heat Transfer (MATH 1020U, PHY 1010U)	Liberal Studies Elective
2-2	ELEE 2790U Electric Circuits (PHY 1020U, MATH 1020U, MATH 1850U)	ENGR 2100U Computational Engineering Applications (ENGR 1200U, MATH 1850U, MATH 2860U or ELEE 2530U)	MECE 2420U Solid Mechanics I (MECE 2230U)	MECE 2430U Dynamics (MATH 1850U, MECE 2230U)	MECE 2860U Fluid Mechanics (PHY 1010U, MATH 1020U)	STAT 2800U Statistics and Probability for Engineers (MATH 1020U)
3-1	ENGR 3011U Introduction to Railway Systems	MANE 3120U Thermo-mechanical Processing of Materials (MANE 2220U)	MANE 3190U Manufacturing and Production Processes (MANE 2220U, MECE 2420U)	MECE 3030U Computer-Aided Design (MECE 2310U, MECE 2420U)	MECE 3270U Kinematics and Dynamics of Machines (MECE 2430U or ENGR 2020U)	MECE 3350U Control Systems (ELEE 2790U or ELEE 2210U or METE 2010U, MATH 2860U, MECE 2430U)
3-2	ENGR 3360U Engineering Economics	MANE 3300U Integrated Manufacturing Systems (MANE 3190U)	MANE 3460U Industrial Ergonomics	MANE 4045U Quality Control (STAT 2800U)	MECE 3220U Machine Design (MECE 3270U, MECE 2310U, MECE 2420U)	Liberal Studies Elective
4-1	ENGR 4022U Railway Safety and Signalling (ENGR 3011U)	ENGR 4760U Ethics, Law and Professionalism for Engineers	ENGR 4950U Capstone Systems Design for Mechanical, Automotive, Mechatronics and Manufacturing Engineering I (Successful completion of all non-elective courses in year three)	MANE 4110U Design for Manufacturing (MANE 3300U, MANE 3190U)	MANE 4280U Robotics & Automation (MECE 3350U)	MANE 4390U Modeling Manufacturing Systems (MANE 3300U)
4-2	ENGR 4033U Railway Rolling Stock (ENGR 3011U)	ENGR 4044U Railway Systems Operation and Maintenance (ENGR 3011U)	ENGR 4951U Capstone Systems Design for Mechanical, Automotive, Mechatronics and Manufacturing Engineering II (ENGR 4950U)	MANE 4600U Additive Manufacturing (MECE 3030U, MANE 3190U)	METE 4200U Industrial Automation	