

## Mechanical Engineering: Railway Specialization 2026-2027

| Year | Course  | Course  | Course  | Course   | Course  | Course  |
|------|---|---|---|--|---|---|
| 1-1  | ENGR 1015U<br>Introduction to Engineering   | ENGR 1050U<br>Engineering Communications and Technology Impacts<br>(Credit restrictions: COMM 1050U/ SOCI 1470U)                | MATH 1010U<br>Calculus I  | MATH 1850U<br>Linear Algebra for Engineers   | PHY 1010U<br>Physics I  |   |
| 1-2  | CHEM 1800U<br>Chemistry for Engineers<br>(Credit restrictions: CHEM 1010U/ CHEM 1020U/CHEM 1110U) | ENGR 1025U<br>Engineering Design<br>(ENGR 1015U, ENGR 1050U)  | ENGR 1200U<br>Introduction to Programming for Engineers<br>(Credit Restriction: INFR 1100U) | MATH 1020U<br>Calculus II<br>(MATH 1010U)  | PHY 1020U<br>Physics II<br>(PHY 1010U)  |   |
| 2-1  | MANE 2220U<br>Structure and Properties of Materials<br>(CHEM 1800U)                               | MATH 2860U<br>Differential Equations for Engineers<br>(MATH 1020U, Coreq: MATH 1850U)   | MECE 2230U<br>Statics<br>(MATH 1020U, PHY 1010U)  | MECE 2310U<br>Concurrent Engineering and Design<br>(ENGR 1025U or ESNS 1200U)        | MECE 2320U<br>Thermodynamics<br>(PHY 1010U)   |   |
| 2-2  | ELEE 2790U<br>Electric Circuits<br>(MATH 1020U, MATH 1850U, PHY 1020U)                            | ENGR 2100U<br>Computational Engineering Applications<br>(ENGR 1200U, MATH 1850U, ELEE 2530U or MATH 2860U)                      | MECE 2420U<br>Solid Mechanics I<br>(MECE 2230U)   | MECE 2430U<br>Dynamics<br>(MATH 1850U, MECE 2230U)                                   | MECE 2860U<br>Fluid Mechanics<br>(MATH 1020U, PHY 1010U)  | STAT 2800U<br>Statistics and Probability for Engineers<br>(MATH 1020U)  |
| 3-1  | ENGR 3011U<br>Introduction to Railway Systems   | MANE 3190U<br>Manufacturing and Production Processes<br>(MANE 2220U, MECE 2420U)  | MECE 3030U<br>Computer-Aided Design<br>(MECE 2310U, MECE 2420U)                             | MECE 3270U<br>Kinematics and Dynamics of Machines<br>(ENGR 2020U or MECE 2430U)      | MECE 3350U<br>Control Systems<br>(ELEE 2210U or ELEE 2790U or METE 2010U, MATH 2860U, MECE 2430U) | MECE 3420U<br>Solid Mechanics II<br>(MECE 2420U)                        |
| 3-2  | ENGR 3360U<br>Engineering Economics   | MECE 3210U<br>Mechanical Vibrations<br>(ENGR 2020U or MECE 2430U)   | MECE 3220U<br>Machine Design<br>(MECE 2310U, MECE 2420U, MECE 3270U)                        | MECE 3230U<br>Thermodynamic Applications<br>(MECE 2320U or MECE 2640U or NUCL 2010U) | MECE 3390U<br>Mechatronics<br>(MECE 3270U, MECE 3350U)  | MECE 3930U<br>Heat Transfer<br>(MECE 2320U or MECE 2640U or NUCL 2010U) |
| 4-1  | ENGR 4022U<br>Railway Safety and Signalling<br>(ENGR 3011U)                                       | ENGR 4111U<br>Capstone Systems Design I<br>(Successful completion of all program-respective courses in years one through three) | ENGR 4760U<br>Ethics, Law and Professionalism for Engineers                                 | MECE 4210U<br>Advanced Solid Mechanics and Stress Analysis<br>(MECE 3420U)           | MECE 4290U<br>Finite Element Methods<br>(ENGR 2100U or MATH 2070U, MECE 2310U, MECE 2420U)        |   |
| 4-2  | ENGR 4033U<br>Railway Rolling Stock<br>(ENGR 3011U)   | ENGR 4044U<br>Railway Systems Operation and Maintenance<br>(ENGR 3011U)   | ENGR 4222U<br>Capstone Systems Design II<br>(ENGR 4111U)                                    | Liberal Studies Elective   | Liberal Studies Elective  |   |