

**University of San Diego Shiley-Marcos School of Engineering**  
**Mechanical Engineering Degree Checklist (2022/23 catalog)**

| Complete        | Core Curriculum   | Course that Satisfies Requirement  | Units      |
|-----------------|---|--|------------|
|                 | First Year Writing (CFYW)                               | FYW 150  | 3          |
|                 | Mathematical Reasoning (CMRP)                           | MATH 150   |            |
|                 | Second Language Competency/Elective credit              |  | 3 to 9     |
|                 | Lower-Division Theological and Religious Inquiry (FTRI) |  | 3          |
|                 | Upper-Division Theological and Religious Inquiry (FTRI) |  | 3          |
|                 | Philosophical Inquiry (FPHI)                            |  | 3          |
|                 | Ethical Inquiry (FETI)                                  | PHIL 342   | 3          |
|                 | Scientific and Technological Inquiry (ESTI)             | ENGR 101   |            |
|                 | Historical Inquiry (EHSI)                               |  | 3          |
|                 | Social and Behavioral Inquiry (ESBI)                    | ECON 101 or 102  | 3          |
|                 | Literary Inquiry (ELTI)                                 |  | 3          |
|                 | Artistic Inquiry (EARI)                                 |  | 3          |
|                 | Diversity, Inclusion, Social Justice (FDD1)             | ENGR 103   |            |
|                 | Diversity, Inclusion, Social Justice (FDD2 or FDG2)     |  |            |
|                 | Advanced Writing (CADW)                                 | ENGL 304   | 3          |
|                 | Oral Communication (CORL)                               | COMM 203   | 3          |
|                 | Quantitative Reasoning (CQUR)                           | ISYE 330   |            |
|                 | First Year Integration (CINL)                           | LLC course   |            |
|                 | Advanced Integration (CINT)                             | MENG 492   |            |
| <b>Complete</b> | <b>Math/Science Courses</b>                             | <b>Prerequisites/(Corequisites)</b>                                      |            |
|                 | CHEM 151/151L - General Chemistry                       |  | 4          |
|                 | MATH/Science Elective                                   |  | 3          |
|                 | MATH 150 - Calculus I                                   |  | 4          |
|                 | MATH 151 - Calculus II                                  | MATH 150 (C- or better)  | 4          |
|                 | MATH 310 - Applied Math for Science and Engineering I   | MATH 151 (C- or better)  | 3          |
|                 | MATH 250 - Calculus III                                 | MATH 151 (C- or better)  | 4          |
|                 | ISYE 330 - Engr Probability & Statistics                | MATH 151   | 3          |
|                 | PHYS 270/270L – Mechanics +lab                          | MATH 150   | 4          |
|                 | PHYS 271/271L – Electricity & Magnetism +lab            | PHYS 270 (C- or better), MATH 151  | 4          |
| <b>Complete</b> | <b>Engineering Core Courses</b>                         | <b>Prerequisites/(Corequisites)</b>                                      | <b>33</b>  |
|                 | ENGR 101 - Introduction to Engineering                  | (MATH 150)   | 3          |
|                 | ENGR 102 – Electromechanical System Design              | ENGR 101, ENGR 121/COMP 110, (MATH 151)                                  | 3          |
|                 | ENGR 103 – User-Centered Design                         | ENGR 101, (MATH 151)   | 3          |
|                 | COMP 110 - Computational Problem Solving                | MATH 115 credit or placement in MATH 130 or higher                       | 3          |
|                 | MENG 311 - Materials Science                            | MATH 151 CHEM 151/151L   | 3          |
|                 | MENG 210 - Statics                                      | MATH 150, PHYS 270   | 3          |
|                 | MENG 260 - Introduction to Thermal Sciences             | MATH 151, PHYS 270   | 3          |
|                 | ELEC 201 - Electrical Circuits +lab                     | PHYS 271 (MATH 310)  | 4          |
| <b>Complete</b> | <b>MENG Required Courses</b>                            | <b>Prerequisites/(Corequisites)</b>                                      | <b>25</b>  |
|                 | ISYE 350 - Manufacturing Processes                      | MENG 210, ENGR 311   | 3          |
|                 | MENG 300 - Applied Thermodynamics                       | MENG 260   | 3          |
|                 | MENG 351 - Machine Shop Practices                       |  | 1          |
|                 | MENG 352 - CAD Practices                                |  | 1          |
|                 | MENG 360 - Fluid Mechanics                              | MATH 310, MENG 260, MATH 250   | 3          |
|                 | MENG 370, 370L - Mechanics of Materials +lab            | MENG 210   | 4          |
|                 | MENG 375 - Dynamics                                     | MENG 210   | 3          |
|                 | MENG 400, 400L - Heat Transfer +lab                     | MENG 360   | 4          |
|                 | MENG 430 - Design of Machine Elements                   | MENG 370   | 3          |
|                 | MENG 491 - Senior Design Project I                      | (COMM 203), MENG 311. ENGL 304, (MENG 351, MENG 352, MENG 400, MENG 430) | 4          |
|                 | MENG 492 - Senior Design Project II                     | MENG 491   | 3          |
| <b>Complete</b> | <b>MENG Elective Courses</b>                            |  | <b>32</b>  |
|                 | Simulation-based course                                 |  | 3          |
|                 | Free Elective   |  | 4          |
|                 | MENG Elective   |  | 3          |
|                 | MENG Elective   |  | 3          |
|                 | MENG Elective   |  | 3          |
|                 | MENG Elective   |  | 3          |
|                 |   |  | <b>19</b>  |
|                 |   | <b>Total MENG Degree Units</b>   | <b>147</b> |