Sample Schedule for ChemE/BME Additional Majors in the CMBT Track Updated 4/3/22

| Chemical Eng   | gineering   |  | Chemical Engineer  | ing + BME   |                  |  |
|--|---|--|--|---|------------------|--|
| First Year   |   |  | First Year   |   |                  |  |
|  | Fall  | Units  |  | Fall  |                  | Units  |
| 21-120   | Differential & Integral Calculus  | 10   | 21-120   | Differential & Integral Calculus  |                  | 10   |
| 76-xxx   | Designated Writing Course   | 9  | 76-xxx   | Designated Writing Course   |                  | 9  |
| 99-101   | Computing@Carnegie Mellon   | 3  | 99-101   | Computing@Carnegie Mellon   |                  | 3  |
| 06-100   | Introduction to Chemical Engineering  | 12   | 06-100 or <b>42-101</b>  | Intro to Chemical Engineering or Intro to Biomedical Engineering  |                  | 12   |
| 09-105   | Introduction to Modern Chemistry I  | 10   | 09-105 or <b>03-121</b>  | Introduction to Modern Chemistry I or Modern Biology  |                  | 9-10   |
|  | Total:  | 44   |  | ······································  | Total:           | 43-44  |
|  |   | ••   |  |   | Totan            |  |
|  | Spring  | Units  |  | Spring  |                  | Units  |
| 21-122   | Integration, Differential Equations & Approximation   | 10   | 21-122   | Integration & Approximation   |                  | 10   |
| XX-XXX   | Introductory Engineering Elective   | 10   | 06-100 or <b>42-101</b>  | Intro to Chemical Engineering or Intro to Biomedical Engineering  |                  | 12   |
| 33-141   | Physics I for Engineering Students  | 12   | 33-141   | Physics I for Engineering Students  |                  | 12   |
|  | ,   |  |  | ,   |                  |  |
| xx-xxx   | General Education Course  | 9  | 09-105 or <b>03-121</b>  | Introduction to Modern Chemistry I or Modern Biology  |                  | 9-10   |
|  | <b>T</b> . (.)  |  | XX-XXX   | General Education Course  | <b>T</b> . 4 . 1 | 9  |
|  | Total:  | 43   |  |   | Total:           | 52-53  |
| Second Year  |   |  | Second Year  |   |                  |  |
| Second fear  |   | Units  | Second real  | Fall  |                  | Units  |
| 04.054   | Fall  |  | 04.054   | Fall  |                  |  |
| 21-254   | Linear Algebra and Vector Calculus for Engineers  | 11   | 21-254   | Linear Algebra and Vector Calculus for Engineers  |                  | 11   |
| 06-223   | Chemical Engineering Thermodynamics   | 12   | 06-223   | Chemical Engineering Thermodynamics   |                  | 12   |
| 06-222   | Sophomore Chemical Engineering Seminar  | 1  | 06-222   | Sophomore Chemical Engineering Seminar  |                  | 1  |
| 09-106   | Modern Chemistry II   | 10   | 09-106   | Modern Chemistry II   |                  | 10   |
| XX-XXX   | Computer Sci./Physics II**  | 10 or 12   | XX-XXX   | Computer Sci./Physics II**  |                  | 10 or 12   |
| XX-XXX   | General Education Course  | 9  | 42-202 or 42-203   | Physiology or BME Laboratory  |                  | 9  |
| 39-210   | Experiential Learning I   | 0  | 39-210   | Experiential Learning I   |                  | 0  |
|  | Total:  | 53-55  |  |   | Total:           | 53-55  |
|  |   |  |  |   |                  |  |
|  | Spring  | Units  |  | Spring  |                  | Units  |
| 06-261   | Fluid Mechanics   | 9  | 06-261   | Fluid Mechanics   |                  | 9  |
| 06-262   | Math. Methods of Chem. Engineering  | 12   | 06-262   | Math: Methods of Chem. Engineering  |                  | 12   |
| 09-221   | Lab I: Introduction to Chemical Analysis  | 12   | 09-221   | Lab I: Introduction to Chemical Analysis  |                  | 12   |
| xx-xxx   | Computer Sci./Physics II**  | 10 or 12   | xx-xxx   | Computer Sci./Physics II**  |                  | 10 or 12   |
| xx-xxx   | General Education Course  | 9  | 42-201   | Professional Issues in BME  |                  | 3  |
| 39-220   | Experiential Learning II  | 0  | 42-202 or 42-203   | Physiology or BME Laboratory  |                  | 9  |
|  |   |  | 39-220   | Experiential Learning II  |                  | 0  |
|  | Total:  | 52-54  |  |   | Total:           | 55-57  |
|  |   |  |  |   |                  |  |
| Third Year   |   |  | Third Year   |   |                  |  |
|  |   |  |  |   |                  |  |
|  | Fall  | Units  | minu reur  | Fall  |                  | Units  |
| 06-310   | Fall<br>Molecular Foundations of ChemE  | Units<br>9   |  | Fall<br>Molecular Foundations of ChemE  |                  | Units<br>9   |
| 06-310<br>06-322   | Molecular Foundations of ChemE  | 9  | 06-310   | Molecular Foundations of ChemE  |                  | 9  |
| 06-322   | Molecular Foundations of ChemE<br>Junior ChemE Seminar  | 9<br>2   | 06-310<br>06-323   | Molecular Foundations of ChemE<br>Heat and Mass Transfer  |                  | 9<br>9   |
| 06-322<br>06-323   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer  | 9<br>2<br>9  | 06-310<br>06-323<br>06-325   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE  |                  | 9<br>9<br>6  |
| 06-322<br>06-323<br>06-325   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE  | 9<br>2<br>9<br>6   | 06-310<br>06-323<br>06-325<br>06-326   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms  |                  | 9<br>9<br>6<br>6   |
| 06-322<br>06-323<br>06-325<br>06-326   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms  | 9<br>2<br>9<br>6<br>6  | 06-310<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i>  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry   |                  | 9<br>9<br>6<br>9 or 10   |
| 06-322<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i>  | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry   | 9<br>2<br>9<br>6<br>9 or 10  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b>  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis   |                  | 9<br>9<br>6<br>9 or 10<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i><br>xx-xxx  | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br><i>Organic Chemistry 1 or Modern Organic Chemistry</i><br>General Education Course  | 9<br>2<br>9<br>6<br>9 or 10<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course   |                  | 9<br>9<br>6<br>9 or 10<br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i>  | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III  | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b>  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis   | Totalı           | 9<br>9<br>6<br>9 or 10<br>9<br>9<br>0  |
| 06-322<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i><br>xx-xxx  | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br><i>Organic Chemistry 1 or Modern Organic Chemistry</i><br>General Education Course  | 9<br>2<br>9<br>6<br>9 or 10<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course   | Total:           | 9<br>9<br>6<br>9 or 10<br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i><br>xx-xxx  | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:  | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b>  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br><i>Organic Chemistry I or Modern Organic Chemistry</i><br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III  | Total:           | 9<br>9<br>6<br>9 or 10<br>9<br>9<br>0<br><b>57-58</b>  |
| 06-322<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i><br>xx-xxx<br>39-310  | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:  | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br>50-51<br>Units  | 06-310<br>06-323<br>06-325<br>06-326<br><i>09-217/219</i><br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring  | Total:           | 9<br>9<br>6<br>9 or 10<br>9<br>0<br>57-58<br>Units   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry 1 or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:<br>Spring<br>Unit Operations of ChemE  | 9<br>2<br>9<br>6<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE  | Total:           | 9<br>9<br>6<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory   | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br><i>Organic Chemistry I or Modern Organic Chemistry</i><br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory   | Total:           | 9<br>9<br>6<br>6<br>9 or 10<br>9<br>9<br>0<br><b>57-58</b><br><b>Units</b><br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering   | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering   | Total:           | 9<br>9<br>9 or 10<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-363<br>06-364<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective  | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b>  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis   | Total:           | 9<br>9<br>6<br>6<br>9 or 10<br>9<br>0<br><b>57-58</b><br><b>Units</b><br>9<br>9<br>9<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective   | 9<br>2<br>9<br>6<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective  | Total:           | 9<br>9<br>6<br>6<br>9<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-363<br>06-364<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br><i>Organic Chemistry 1 or Modern Organic Chemistry</i><br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course  | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b>  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis   |                  | 9<br>9<br>6<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective   | 9<br>2<br>9<br>6<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective  | Total:<br>Total: | 9<br>9<br>6<br>6<br>9<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br><i>Organic Chemistry 1 or Modern Organic Chemistry</i><br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course  | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective  |                  | 9<br>9<br>6<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Wint Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Total:</b>  | 9<br>2<br>9<br>6<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course   |                  | 9<br>9<br>6<br>9 or 10<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total</b><br><b>Spring</b><br>Mit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Total</b> :   | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9<br>9<br>9<br>54<br><b>Units</b>  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Mumerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMET Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Molt Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMET Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course   |                  | 9<br>9<br>6<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design  | 9<br>2<br>9<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br><b>Units</b><br>12   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course   |                  | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b>   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Total:</b><br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory   | 9<br>2<br>9<br>6<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br>42-xxx or 42-302<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>42-xxx or 42-302<br>xx-xxx<br>xx-xxx<br><i>x</i> -xxx  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory  |                  | 9<br>9<br>6<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>Units   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design  | 9<br>2<br>9<br>6<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course   |                  | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Total:</b><br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory   | 9<br>2<br>9<br>6<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>0 <i>9-217/219</i><br><b>42-xxx or 42-302</b><br>x-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>x-xxx<br>x-xxx<br><b>Fourth Year</b><br>06-421<br>06-423  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory  |                  | 9<br>9 or 10<br>9<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx   | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Total:</b><br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective  | 9<br>2<br>9<br>6<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br>42-xxx or 42-302<br>xx-xxx<br>39-310<br>06-361<br>06-361<br>06-363<br>06-364<br>42-xxx or 42-302<br>xx-xxx<br>Xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>42-401   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br><b>Foundations of BME Design</b>  |                  | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>2<br>9<br>6   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx                     | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective  | 9<br>2<br>9<br>6<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br><b>Units</b><br>12<br>9<br>9<br>9<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br>42-xxx or 42-302<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>42-xxx or 42-302<br>xx-xxx<br>xx-xxx<br><i>Fourth Year</i><br>06-421<br>06-423<br>42-401<br>42-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective<br>General Education Course<br>Fall<br>Chemical Process System Design<br>Unit Operations Laboratory<br>Foundations of BME Design<br>CMBT Track Elective  |                  | 9<br>9<br>6<br>9<br>9<br>9<br>5<br>7-58<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>0<br>12<br>2<br>9<br>6<br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx                     | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total:</b><br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective  | 9<br>2<br>9<br>6<br>6<br>9 or 10<br>9<br>0<br><b>50-51</b><br><b>Units</b><br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br><b>Units</b><br>12<br>9<br>9<br>9<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br><b>42-401</b><br><b>42-xxx</b><br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations of <b>BME Design</b><br><b>CMBT Track Elective</b><br>General Education Course  |                  | 9<br>9<br>6<br>9<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>54<br>54<br>54<br>55<br>6<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9             |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx                     | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>Unrestricted Elective  | 9<br>2<br>9<br>6<br>9<br>9<br>0<br>5<br>0-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>Units<br>12<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br><b>42-401</b><br><b>42-xxx</b><br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations of <b>BME Design</b><br><b>CMBT Track Elective</b><br>General Education Course  | Total:           | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9<br>6<br>9<br>9<br>9<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx                     | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>Unrestricted Elective  | 9<br>2<br>9<br>6<br>9<br>9<br>0<br>5<br>0-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>Units<br>12<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br><b>42-401</b><br><b>42-xxx</b><br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMBT Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations of <b>BME Design</b><br><b>CMBT Track Elective</b><br>General Education Course  | Total:           | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9<br>6<br>9<br>9<br>9<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx                     | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Hate and Mass Transfer<br>Momerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>rotar</b><br><b>Spring</b><br>Mit Operations of ChemE<br>Transport Process Laboratory<br>Organical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>Beneral Education Course<br><b>Fall</b><br>Memical Process System Design<br>Mit Operations Laboratory<br>Unrestricted Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b>  | 9<br>2<br>9<br>6<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9<br>9<br>9<br>9<br>9   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br><b>42-401</b><br><b>42-xxx</b><br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br><b>CMET Track Elective or BME Systems Modeling and Analysis</b><br>General Education Course<br>Experiential Learning III<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br><b>CMET Track Elective or BME Systems Modeling and Analysis</b><br>Advanced Chemistry Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations of <b>BME Design</b><br><b>CMET Track Elective</b><br>General Education Course<br>General Education Course  | Total:           | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9<br>6<br>9<br>9<br>9<br>54  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br><b>Total</b><br><b>Spring</b><br>Mit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unrestricted Elective<br>Unrestricted Elective  | 9<br>2<br>9<br>6<br>6<br>7<br>9<br>0<br>5<br>0-5<br>1<br>Units<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>8<br>12<br>9<br>9<br>9<br>9<br>9<br>4<br>8<br>48<br>Units   | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br>42-xxx or 42-302<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>42-xxx or 42-302<br>xx-xxx<br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i><br><i>xx-xxx</i> | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Mumerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Molt Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective<br>General Education Course<br>Fall<br>Chemical Process System Design<br>Unit Operations of BME Design<br>CMBT Track Elective<br>General Education Course<br>Faulations of BME Design<br>CMBT Track Elective<br>General Education Course<br>Septial Education Course   | Total:           | 9<br>9<br>6<br>9<br>9<br>9<br>5<br>5<br>7<br>5<br>7<br>5<br>7<br>5<br>7<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx                               | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br>Fall<br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>General Education Course<br>Total:<br>Total:  | 9<br>2<br>9<br>6<br>9<br>9<br>0<br>50-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>9<br>9<br>9<br>9<br>48<br>Units<br>9  | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx</b> or <b>42-302</b><br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br><b>42-401</b><br><b>42-xxx</b><br>xx-xxx<br>xx-xxx   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry 1 or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective<br>General Education Course<br>Fall<br>Chemical Process System Design<br>Unit Operations of BME Design<br>CMBT Track Elective<br>General Education Course<br>Foundations of BME Design<br>CMBT Track Elective<br>General Education Course<br>Spring<br>Chemical Engineering Process Control  | Total:           | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>9<br>9<br>9<br>54<br>Units<br>9<br>9   |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-2177219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx<br>xx-xxx                     | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestri | 9<br>2<br>9<br>6<br>9<br>9<br>0<br>5<br>0-51<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>8<br>12<br>9<br>9<br>9<br>9<br>9<br>9<br>4<br>8<br>2<br>4<br>8<br>0<br>12<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9 | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br><b>42-xxx or 42-302</b><br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br><b>42-xxx or 42-302</b><br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br><b>42-401</b><br><b>42-xxx</b><br>xx-xxx<br><b>b</b>   | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective<br>General Education Course<br>Fall<br>Chemical Process System Design<br>Unit Operations Laboratory<br>Foundations of BME Design<br>CMBT Track Elective<br>General Education Course<br>General Education Course<br>General Education Course<br>General Education Course  | Total:           | 9<br>9 or 10<br>9<br>0<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>12<br>9<br>6<br>9<br>9<br>9<br>54<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9 |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx           | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>Unrestricted Elective<br>Unrestricted Elective<br>Chemical Product Design<br>Chemical Product Design<br>Chemical Engineering Process Control<br>Unrestricted Elective  | 9<br>2<br>9<br>6<br>9<br>9<br>0<br>5<br>0-5<br>1<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>Units<br>9<br>9<br>9<br>9<br>4<br>8<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9                | 06-310<br>06-323<br>06-325<br>06-326<br>09-217//219<br>42-xxx or 42-302<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>42-xxx or 42-302<br>xx-xxx<br><i>Xx-xxx</i><br><i>Fourth Year</i><br>06-421<br>06-423<br>42-401<br>42-xxx<br>xx-xxx<br><i>Xx-xxx</i>  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modem Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective<br>General Education Course<br>Earl<br>Chemical Process System Design<br>Unit Operations Laboratory<br>Foundations of BME Design<br>CMBT Track Elective<br>General Education Course<br>General Education Course | Total:           | 9<br>9 or 10<br>9<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>9<br>9<br>9<br>54<br>Units<br>9<br>9<br>9<br>9<br>54  |
| 06-322<br>06-323<br>06-325<br>06-326<br>09-217/219<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>xx-xxx<br>xx-xxx<br>xx-xxx<br><b>Fourth Year</b><br>06-421<br>06-423<br>xx-xxx<br>xx-xxx<br>xx-xxx<br>xx-xxx           | Molecular Foundations of ChemE<br>Junior ChemE Seminar<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>General Education Course<br>Experiential Learning III<br>Total:<br><b>Spring</b><br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>Advanced Chemistry Elective<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>General Education Course<br><b>Fall</b><br>Chemical Process System Design<br>Unit Operations Laboratory<br>Unrestricted Elective<br>General Education Course<br><b>Total:</b>   | 9<br>2<br>9<br>6<br>6<br>9 or 10<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>5<br>4<br>12<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>48<br><b>Units</b><br>12<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9     | 06-310<br>06-323<br>06-325<br>06-326<br>09-217/219<br>42-xxx or 42-302<br>xx-xxx<br>39-310<br>06-361<br>06-363<br>06-364<br>42-xxx or 42-302<br>xx-xxx<br><i>Xx-xxx</i><br><i>Fourth Year</i><br>06-421<br>06-423<br>42-401<br>42-xxx<br>xx-xxx<br>xx-xxx<br>06-464<br>42-402<br>42-xxx<br>xx-xxx  | Molecular Foundations of ChemE<br>Heat and Mass Transfer<br>Numerical Methods & Machine Learning for ChemE<br>Optimization, Modeling, & Algorithms<br>Organic Chemistry I or Modern Organic Chemistry<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>General Education Course<br>Experiential Learning III<br>Spring<br>Unit Operations of ChemE<br>Transport Process Laboratory<br>Chemical Reaction Engineering<br>CMBT Track Elective or BME Systems Modeling and Analysis<br>Advanced Chemistry Elective<br>General Education Course<br>Fall<br>Chemical Process System Design<br>Unit Operations of BME Design<br>CMBT Track Elective<br>General Education Course<br>General Education Course                          | Total:           | 9<br>9 or 10<br>9 or 10<br>57-58<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>54<br>Units<br>9<br>9<br>9<br>9<br>54<br>Units<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9 |

Minimum no. of units to graduate: 391 (ChemE), 415 (BME/ChemE)