# Five-Year Molecular Biology/Biotechnology

Sample Pathway to Graduation

124 S.H. – non-RFI Track
125 S.H. – RFI Track

| Freshman Year: Summer Semester | | | |
|---|---|---|---|
| GE 1000: Transition to Kean | 1 | | |
| **Freshman Year: Fall Semester** | | **Freshman Year: Spring Semester** | |
| STME 1903: Research Methods | 1 | STME 2903: Research Experience (RFI track) | 2 |
| STME 2601: Living Systems I | 4 | STME 2602: Living Systems II | 4 |
| STME 1403: Math & Computational Methods I | 4 | STME 1603: Math & Computational Methods II | 4 |
| STME: 1401: Chemical Systems I | 4 | STME 1601: Chemical Systems II | 4 |
| ENG 1030: Composition | 3 | COMM 1402: Speech Communication | 3 |
| | 16 | | 15 – 17 |
| **Sophomore Year: Fall Semester** | | **Sophomore Year: Spring Semester** | |
| GE 2024: Research and Technology | 3 | HIST 1062: Worlds of History (RFI track) | 3 |
| STME 3903 Advanced Research Experience (RFI track) | 3 | CHEM 2283: Quantitative Analysis | 4 |
| STME 2681: Organic Chemistry I | 3 | STME 2682: Organic Chemistry II | 3 |
| STME 2683: Organic Chemistry I Lab | 2 | STME 2684: Organic Chemistry II Lab | 2 |
| STME 1605: Intro to Programming | 4 | STME 2603: Probabilistic Methods of Science | 4 |
| HIST 1062: Worlds of History (non-RFI track) | 3 | | |
| | 15 | | 13 – 16 |
| **Junior Year: Fall Semester** | | **Junior Year: Spring Semester** | |
| STME 2401: Physical Systems I | 4 | GE Approved Humanities Requirement | 3 |
| BIO 3305: Principles of Microbiology | 4 | BIO 3403: Anatomy & Physiology I | 4 |
| CHEM 3284: Instrumental Methods | 4 | BIO 3709: Genetics | 4 |
| ENG 2403: World Literature | 3 | STME 3401: Biochemistry OR BIO 4105: Essentials of Biochemistry | 4 |
| Major elective (non-RFI)* | 3 | STME 3610: Current Issues in Sci & Tech (non-RFI track)** | 1 |
| | 15 – 18 | | 15 – 16 |
| **Senior Year: Fall Semester** | | **Senior Year: Spring Semester** | |
| Free Elective | 3 | STME 4610: Science & Technology Seminar (Capstone) | 3 |
| BIO 4700: Molecular Genetics | 4 | GE Social Sciences Requirement | 3 |
| BIO 3820: Basic Tissue Culture | 4 | Free Elective | 3 |
| STME 5020: Ethics of Biotechnology | 1 | Free Elective | 3 |
| STME 5103: Scientific Writing | 3 | Free Elective | 3 |
| | 15 | | 15 |

**Major Electives: RFI Track = 0 cr.; non-RFI Track = 3 cr.*
***STME 3610 to be taken by students who did not complete <u>both</u> STME 2903 & 3903 (RFI Research Experience)*

## 5th Year Courses

| Summer prior to start of 5th Year | | | |
|---|---|---|---|
| STME 5610: Advanced Seminar in Science & Technology | 3 | | |
| **5th Year: Fall Semester** | | **5th Year: Spring Semester** | |
| STME 5010: Molecular Cell Biology I | 3 | STME 5240: Molecular Cell Biology II | 3 |
| STME 5510: Biostats & Comp Analysis OR<br>MATH 5505 Applied Stats | 3 | Approved Graduate Elective Course | 3 |
| STME 5170: Molecular Techniques OR<br>STME 5140: Cellular Techniques (Spring) | 3 | STME 5140: Cellular Techniques OR<br>STME 5170: Molecular Techniques (Fall) | 3 |
| Biotech Intern/Externship OR STME 5400 Biotech Lit Review | 3 | Biotech Intern/Externship OR Approved Grad Lab Course | 3 |
| Approved Graduate Elective Course | 3 | | |
| | 15 | | 12 |