

## Systems and Translational Biology Track

### FALL YEAR 1

| <u>Course #</u> | <u>Course Name</u>  | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|---|---------------------|---------------------|
| MSCI 601        | Principles of Basic Medical Sciences I                            | 5                   | 5                   |
| SBTM 601        | Experimental Techniques in Molecular, Cell, and Systems Biology I | 4                   | 4                   |
| MSCI 687        | Professionalism and Ethics  | 1                   | 1                   |
|                 | Lab Rotation I & II   |                     |                     |
|                 | Semester Hours  | 10                  | 10                  |
|                 | Cumulative Hours  | 10                  | 10                  |

### SPRING YEAR 1

| <u>Course #</u> | <u>Course Name</u>   | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--|---------------------|---------------------|
| SBTM 612        | Experimental Techniques in Molecular, Cell, and Systems Biology II | 4                   | 4                   |
| SBTM 613        | Human Organ Systems I  | 5                   | 5                   |
|                 | Lab Rotation III & IV  |                     |                     |
|                 | Semester Hours   | 9                   | 9                   |
|                 | Cumulative Hours   | 19                  | 19                  |

### SUMMER YEAR 1

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 681        | Seminar            | 1                   | 0                   |
| MSCI 691        | Research           | 5                   | 0                   |
|                 | Semester Hours     | 6                   | 0                   |
|                 | Cumulative Hours   | 25                  | 19                  |

### FALL YEAR 2

| <u>Course #</u> | <u>Course Name</u>  | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|---|---------------------|---------------------|
| SBTM 614        | Human Organ Systems II                                    | 5                   | 5                   |
| SBTM 624        | Computational Systems Biology: Biostatistics              | 2                   | 2                   |
| SBTM 625        | Computational Systems Biology: Bioinformatics and Imaging | 2                   | 2                   |
|                 | Semester Hours  | 9                   | 9                   |
|                 | Cumulative Hours  | 34                  | 28                  |

**SPRING YEAR 2**

| <u>Course #</u>     | <u>Course Name</u>                      | <u>Credit Hours</u> | <u>Graded Hours</u> |
|---------------------|---|---------------------|---------------------|
| MSCI 610 (Module 1) | Pathogenesis of Human Disease, Module 1 | 1                   | 1                   |
| SBTM 615            | Pathobiology and Therapeutics           | 3                   | 3                   |
|                     | Elective                                | 3-4                 | 3-4                 |
| MSCI 691            | Research                                | 1-2                 | 0                   |
|                     | Semester Hours                          | 9                   | 7-8                 |
|                     | Cumulative Hours                        | 43                  | 35-36               |

**SUMMER YEAR 2**

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 681        | Seminar            | 1                   | 0                   |
| MSCI 691        | Research           | 5                   | 0                   |
|                 | Semester Hours     | 6                   | 0                   |
|                 | Cumulative Hours   | 49                  | 35-36               |

**FALL YEAR 3**

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 691        | Research           | 9                   | 0                   |
|                 | Semester Hours     | 9                   | 0                   |
|                 | Cumulative Hours   | 58                  | 35-36               |

**SPRING YEAR 3**

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 691        | Research           | 9                   | 0                   |
|                 | Semester Hours     | 9                   | 0                   |
|                 | Cumulative Hours   | 67                  | 35-36               |

**SUMMER YEAR 3**

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 681        | Seminar            | 1                   | 0                   |
| MSCI 691        | Research           | 5                   | 0                   |
|                 | Semester Hours     | 6                   | 0                   |
|                 | Cumulative Hours   | 73                  | 35-36               |

**FALL YEAR 4**

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 691        | Research           | 9                   | 0                   |
|                 | Semester Hours     | 9                   | 0                   |
|                 | Cumulative Hours   | 82                  | 35-36               |

**SPRING YEAR 4**

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 691        | Research           | 9                   | 0                   |
|                 | Semester Hours     | 9                   | 0                   |
|                 | Cumulative Hours   | 91                  | 35-36               |

**SUMMER YEAR 4**

| <u>Course #</u> | <u>Course Name</u> | <u>Credit Hours</u> | <u>Graded Hours</u> |
|-----------------|--------------------|---------------------|---------------------|
| MSCI 691        | Research           | 5                   | 0                   |
| MSCI 681        | Seminar            | 1                   | 0                   |
|                 | Semester Hours     | 6                   | 0                   |
|                 | Cumulative Hours   | 97                  | 35-36               |

**ELECTIVES**

| <u>Course #</u> | <u>Course Name</u>                               | <u>Credit/Graded Hours</u> |
|-----------------|--|----------------------------|
| ANSC / VTPP 654 | Molecular Endocrinology                          | 3                          |
| BICH 603        | General Biochemistry                             | 3                          |
| BICH 672        | Biological Membranes                             | 1                          |
| BICH 624        | Enzymes, Proteins, and Nucleic Acids             | 3                          |
| BICH 625        | Nucleic Acid-Protein Interactions                | 1                          |
| BICH 628        | Computational Biology                            | 3                          |
| BICH 631        | Biochemical Genetics                             | 3                          |
| BICH/BIOL 650   | Genomics   | 3                          |
| BIOL 601        | Biological Clocks                                | 3                          |
| BIOL 611        | Molecular Biology of Differentiation/Development | 3                          |
| BIOL 644        | Neural Development                               | 3                          |
| BIOL 651        | Bioinformatics                                   | 3                          |
| BIOL 670        | The Cell Cycle                                   | 1                          |
| BIOL 674        | Cellular & Molecular Aspects of Development      | 3                          |
| MCMD 625        | Nucleic Acid / Protein Interactions              | 1                          |
| MCMD 671        | Macromolecular Folding / Design                  | 3                          |
| MMPA 601        | Microbial Pathogenesis                           | 3                          |
| MSCI 612        | Current Topics in Cell Signaling                 | 3                          |
| VAPH 640        | Neurobiology                                     | 1-5                        |
| VTMI 601        | Fundamentals of Pathobiology                     | 5                          |
| VTMI 649        | Immunology                                       | 3                          |