|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  | **PHYSICS MATHEMATICS EDUCATION CURRICULUM** |
| Note: Numbers in square brackets ([...]) are counted elsewhere |  |  |
|  | ***CRS NO*** | ***CRS NAME*** | ***MIN CH*** | ***MAX CH*** | ***Comments*** |
| **PHYSICS BA MAJOR** | MATH 198 | Analytic Geometry and Calculus I | 5 | 5 | Fulfills LSP Mathematics Mode, Overlap with Mathematics |
|  | MATH 263 | Analytic Geometry and Calculus II | 5 | 5 | Overlap with Mathematics |
|  | MATH 264 | Analytic Geometry and Calculus III | 3 | 3 | Overlap with Mathematics |
|  | MATH 365 | Ordinary Differential Equations | 3 | 3 | Overlap with Mathematics |
|  | STAT 290 | Statistics | 3 | 3 | Overlap with Mathematics |
|  | PHYS 145 | Physics Seminar | 2 | 2 |   |
|  | PHYS 195 | Physics with Calculus I | 5 | 5 | Overlap with Mathematics |
|  | PHYS 196 | Physics with Calculus II | 5 | 5 |   |
|  | PHYS 250 | Modern Physics I | 3 | 3 |   |
|  | PHYS 251 | Modern Physics II | 3 | 3 |   |
|  | PHYS 275 | Vibrations and Waves | 3 | 3 |   |
|  | PHYS 310 | Intermediate Physics Laboratory | 2 | 2 |   |
|  | PHYS 345 | Junior Seminar | 1 | 1 |   |
|  | PHYS 382 | Mathematical Physics | 3 | 3 |   |
|  | PHYS 388 | Advanced Laboratory | 3 | 3 |   |
|  | PHYS 445 | Advanced Physics Seminar | 1 | 1 |   |
|  |   | Learning Plan | [15] | [15] | Fulfilled with education and mathematics courses (e.g. ED 389 (3), ED 393 (4), ED 593 (3), MATH 363 (3), & MATH 455 (3)) |
|  |   | Physics Elective 1 | 3 | 3 | Must be PHYS 386 (Classical), PHYS 482 (E&M), or PHYS 486 (Thermo) |
|  |   | Physics Elective 2 | 3 | 3 | Can be fullfilled with advanced mathematics elective  |
|  | ***CRS NO*** | ***CRS NAME*** | ***MIN CH*** | ***MAX CH*** | ***Comments*** |
| **MATHE- MATICS BA MAJOR** | CS 170 or 180 | (A computer science course) | 3 | 3 |   |
|  | MATH 198 | Analytic Geometry and Calculus I | [5] | [5] | Fulfills LSP Mathematics Mode, Overlasp with Physics |
|  | STAT 290 | Statistics | [3] | [3] | Fulfills LSP Statistics Req, Overlaps with Physics |
|  | CHEM 130 or PHYS 195 | Intro Chemistry or Physics | [4] | [5] | Fulfills LSP Physical Science Mode, Both required |
|  | MATH 101 | Freshman Seminar | [1] | [1] | Waived |
|  | MATH 200 | Foundations of Mathematics | 3 | 3 |   |
|  | MATH 263 | Analytic Geometry and Calculus II | [5] | [5] | Overlaps with physics |
|  | MATH 264 | Analytic Geometry and Calculus III | [3] | [3] | Overlaps with physics |
|  | MATH 357 | Linear Algebra | 3 | 3 |   |
|  | MATH 398 | Junior Seminar in Mathematics | 1 | 1 |   |
|  | MATH 451 | Algebraic Structures I | 3 | 3 |   |
|  | MATH 461 | Advanced Calculus | 3 | 3 |   |
|  | MATH 497 | Capstone Seminar | 1 | 1 |   |
|  | MATH 363 | College Geometry (Elective 1) | 3 | 3 | List A, Math education requirement |
|  | MATH 455 or 456 | History of Math (Elective 2) | 3 | 3 | List B, Math education requirement |
|  | MATH 365 | Ordinary Differential Equations (Elective 3) | [3] | [3] | Fulfills physics requirement |
|  |   | Physics Elective 1 (Elective 4) | [3] | [3] | Fulfills physics requirement |
|  | PHYS 382 | Mathematical Physics (Elective 5) | [3] | [3] | Fulfills physics requirement |
|  |  |  |  |  |  |
|  | ***CRS NO*** | ***CRS NAME*** | ***MIN CH*** | ***MAX CH*** | ***Comments*** |
| **EDUCA- TION COURSES** | ED 388 | Early Field Experiences | 1 | 1 |   |
|  | ED 389 | Foundations of Education | 3 | 3 |   |
|  | ED 393 | Clinical Experiences in Education | 3 | 3 |   |
|  | ED 394 | Field Experience for ED 393 | 1 | 1 |   |
|  | ED 593 | Psych. Foundations of Education | 3 | 3 |   |
|  |  |  |  |  |  |
| **TRUMAN LSP** | ENG 190 | Writing as Critical Thinking | 3 | 3 |   |
|  | COMM 170 | Public Speaking | 3 | 3 |   |
|  | MATH 186 | Precalculus | [3] | [3] | Assumed satisfied pre-matriculation |
|  | STAT 290 | Statistics | [3] | [3] | Fullfilled with physics and mathematics requirements |
|  |   | Personal Well-Being | 2 | 3 |   |
|  |   | Intercultural | 0 | 3 |   |
|  |   | Qualitative Mode Course | 3 | 3 |   |
|  |   | Qualitative Mode Course | 3 | 3 |   |
|  |   | Qualitative Mode Course | 3 | 3 |   |
|  | BIOL 107 | Introductory Biology I | 4 | 4 | Quantitative Mode Course (Life Sciemce), Counts toward non-physics science ed. req |
|  | CHEM 130 | Chemical Principles I | 4 | 4 | Quantitative Mode Course (Physical Science), Fulfills math reqs., Counts toward non-physics science ed. Req |
|  | MATH 198 | Analytic Geometry and Calculus I | [5] | [5] | Quantitative Mode Course (Mathematical), Fulfills physics and mathematics requirements |
|  | JINS |   | 3 | 3 |   |
|  |   | Foreign Language | 0 | 12 | BA Requirement |
|  |   | Truman Program | 2 | 2 |   |
|  |   | Missouri Statute | 1 | 3 |   |
|  |  |  |  |  |  |
|  |  | **TOTAL UNDERGRADUATE** | **121** | **139** |  |
|  |  |  |  |  |  |
|  | ***CRS NO*** | ***CRS NAME*** | ***MIN CH*** | ***MAX CH*** | ***Comments*** |
|  | ED 601 | Measurement and Evaluation | 3 | 3 | (Su, F, Sp) |
| **MAE** | ED 603 | Learning Strat for Print Discourse | 3 | 3 | (Su, F, Sp) |
|  | ED 605 | Psych of the Exceptional Child | 3 | 3 | (Su, F, Sp) |
|  | STEM 608 | Management of Instruction | 3 | 3 | (F) |
|  | ED 609 | Internship | 8 | 16 | Must teach both physics and math (1/2 semester each), one year preferable |
|  | ED 632 | Research | 3 | 3 | (F, Sp) |
|  | NASC 501G | Philosophy of Science | 3 | 3 | Required for certification, (Sp) |
|  | MATH 502G | Topics in Math Ed: Technology | 3 | 3 | (Sp) |
|  |   | ONE OF: |   |   |   |
|  | PHYS 518G | Advanced Topics | 3 | 3 | (Sp) |
|  | PHYS 580G | Quantum Mechanics | [3] | [3] | (F) |
|  |   | ONE OF: |   |   |   |
|  | MATH 564G | Advanced Linear Algebra | 3 | 3 | (F) |
|  | MATH 515G | Complex Variables | [3] | [3] | (Sp) |
|  | MATH 503G | Topics in Mathematics | [3] | [3] | (Su) |
|  | STAT 570G | Mathematical Probability and Stat | [3] | [3] | (F) |
|  |  |  |  |  |  |
|  |  | **TOTAL GRADUATE** | **35** | **43** |  |