BS in Physics : Sample Curriculum (Revision 5-25-17)

**First Year**
- **Fall**
  - University Physics I
  - Lec/Lab
  - PHY 211 (4)
  - PHY 202 (1)
- **Spring**
  - University Physics II
  - Lec/Lab
  - PHY 213 (4)
  - PHY 204 (1)

**Second Year**
- **Fall**
  - Math Methods I
  - PHY 445 (3)
- **Spring**
  - Math Methods II
  - PHY 446 (3)

**Third Year**
- **Fall**
  - Electricity & Magnetism I
  - PHY 300 (3)
- **Spring**
  - Electricity & Magnetism II
  - PHY 302 (3)

**Fourth Year**
- **Fall**
  - Electrical Engineering
  - Lec/Lab
  - PHY 304 (3)
  - PHY 405 (2)
- **Spring**
  - Optics
  - Lec/Lab
  - PHY 303 (3)
  - PHY 406 (2)

**The General Education Requirements:**
- **Core I:**
  - FYS 100 (3)
  - 100-200 level CT (6)
- **Core II:**
  - ENG Composition (6)
  - Communication (3)
  - Math (3)
  - Physical or Natural Science (4)
  - Social Science (3)
  - Humanities (3)
  - Fine Arts (3)

**Additional Requirements:**
- Writing Intensive (6)
- Multicultural or International (3)

- MTH 335 is not required for the Math minor. If interested in mathematical proofs and picking up a minor in Math, take MTH 300 as one of your electives.

**Total Hours:**
120

If you have questions or find inconsistencies, please contact Dr. Sean P. McBride mcbrides@marshall.edu
BS Physics/Minor CIT : AoE Applied Physics : Sample Curriculum (Revision 5-27-17)

Core I:
FYS 100 (3)
100-200 level CT (3)

Core II:
ENG Composition (6)
Communication (3)
Math (3)
Physical or Natural Science (4)
Social Science (3)
Humanities (3)
Fine Arts (3)

Additional Requirements:
Writing Intensive (6)
Multicultural or International (3)

16 credits 15 credits 15 credits 14 credits 15 credits 15 credits 15 credits 15 credits

The General Education Requirements:

First Year
Fall
- University Physics I Lec/Lab PHY 211 (4) PHY 202 (1)
- Calculus (CT) with Analytic Geometry I MTH 229 (5)
- English Composition ENG 101 (3)
- First Year Seminar FYS 100 (3)

Spring
- University Physics II Lec/Lab PHY 213 (4) PHY 204 (1)
- Calculus with Analytic Geometry II MTH 230 (4)
- Advanced Composition ENG 201 (5)
- 100-200 level CT (3)

Second Year
Fall
- Math Methods I PHY 445 (3)
- Calculus with Analytic Geometry III MTH 231 (4)
- Modern Physics Lec/Lab PHY 320 (3) PHY 421 (2)
- Programming CIT 163 (3)

Spring
- Math Methods II PHY 446 (3)
- Calculus with Analytic Geometry III MTH 231 (4)
- Ordinary Differential Equation MTH 335 (3)
- Soc. Science (3)

Third Year
Fall
- Electricity & Magnetism I PHY 300 (3)
- Optics Lec/Lab PHY 304 (3) PHY 405 (2)
- Data Structures CIT 236 (3)
- Communication (3)

Spring
- Electricity & Magnetism I PHY 300 (3)
- Mechanics PHY 330 (3)
- Thermal Physics PHY 308 (3)
- Writing Intensive Elective (3)

Fourth Year
Fall
- Elective (3) PHY 314 Electronics Strongly Recommended
- Quantum Mechanics I PHY 442 (3)
- Engineering Computation ENGR 111 (3)
- Writing Intensive Elective (3)

Spring
- Elective (3) PHY 425 Solid State Physics Strongly Recommended
- Principles of Chemistry I Lec/Lab CHM 211 (3) CHM 217 (2)
- Capstone PHY 490/491 (1)
- Principles of Chemistry II Lec/Lab CHM 212 (3) CHM 218 (2)

Advanced physics courses are offered every two to three semesters; check with the Physics Department for availability.

- This is a sample curriculum only, the order of courses you take could be different depending on your year of entrance.
- All students must take more than 2 credits hours of capstone research.

Total Hours: 120

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BS Physics/Minor Biology : AoE Bio Physics : Sample Curriculum (Revision 5-25-17)

First Year
- Fall: University Physics I Lec/Lab PHY 211 (4) PHY 202 (1)
- Spring: University Physics II Lec/Lab PHY 213 (4) PHY 204 (1)
- Core I: FYS 100 (3)
- Core II: ENG Composition (6)
- Additional Requirements: Writing Intensive (6)

Second Year
- Fall: Math Methods I Lec/Lab PHY 445 (3)
- Spring: Math Methods II PHY 446 (3)
- Core II: Communication (3)
- Additional Requirements: Writing Intensive (3)

Third Year
- Fall: Electricity & Magnetism PHY 300 (3)
- Spring: Elective (3) PHY 350 Bio-Physics Strongly Recommended
- Core II: Math Methods I PHY 330 (3)
- Additional Requirements: Math Methods II PHY 405 (2)

Fourth Year
- Fall: Capstone PHY 490/491 (1)
- Spring: Capstone PHY 490/491 (1)
- Core II: Humanities (3)
- Additional Requirements: 300-400 Elective (4) BSC Recommended Earn Bio Minor

The General Education Requirements:
Core I:
- FYS 100 (3)
- 100-200 level CT (6)
Core II:
- ENG Composition (6)
- Communication (3)
- Math (3)
- Physical or Natural Science (4)
- Social Science (3)
- Humanities (3)
- Fine Arts (3)

Additional Requirements:
- Writing Intensive (6)
- Multicultural or International (3)

CHM 355 is strongly recommended for BSC 322. BSC 322 is required for the AoE. BSC 417 is strongly recommended for the BSC elective; this requires BSC 322 as a prerequisite. PHY 350 is strongly recommended for the Physics elective. If another 300 level chemistry class is taken as an elective a minor in chemistry can also be earned.

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Total Hours: 120
**The General Education Requirements:**

**Core I:**
- FYS 100 (3)
- 100-200 level CT (6)

**Core II:**
- ENG Composition (6)
- Communication (3)
- Math (3)
- Physical or Natural Science (4)
- Social Science (3)
- Humanities (3)
- Fine Arts (3)

**Additional Requirements:**
- Writing Intensive (6)
- Multicultural or International (3)

**CHM 365** is strongly recommended for the chemistry elective. PHY 360 is strongly recommended for the physics elective. CHM 365 has CHM 356 as a prerequisite. CHM 365 typically offered in the fall, check current version of course catalog and with your advisor.

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**Total Hours:** 120
**The General Education Requirements:**

**Core I:**
- FYS 100 (3)
- 100-200 level CT (6)

**Additional Requirements:**
- Writing Intensive (6)
- Multicultural or International (3)

**Core II:**
- ENG Composition (6)
- Communication (3)
- Math (3)
- Physical or Natural Science (4)
- Social Science (3)
- Humanities (3)
- Fine Arts (3)

**Course Requirements:**
- Course name
- Course number
- Course requires a pre-requisite (arrow enters from side)
- Not required but strongly recommended
- Required course

**Total Hours:** 121

MI 206 is a prerequisite for MI 207, 208, and 210. MI 201 is a prerequisite for MI 202, 204, 205, and 206. BSC 227 and MI 201 are offered in the fall, check current version of course catalog. MI 201 has BSC 227 as a prerequisite. MI 202-206 are only offered in the fall and MI 207-210 are only offered in the spring, check current version of course catalog or MI Department. CHM 203 is no longer a prerequisite for MI 201, contact Dr. Rita Fisher.

If you have questions or find inconsistencies, please contact Dr. Sean P. McBride mcbrides@marshall.edu
Dual Major in Physics & Applied Math: Sample Curriculum (Revision 5-25-17)

The General Education Requirements:

Core I:
- FYS 100 (3)
- 100-200 level CT (6)

Additional Requirements:
- Writing Intensive (6)
- Multicultural or International (3)

Core II:
- ENG Composition (6)
- Communication (3)
- Math (3)
- Physical or Natural Science (4)
- Social Science (3)
- Humanities (3)
- Fine Arts (3)

(★ Either fulfills CS 205. Either fulfills CS 210 (3) or CS 300 (3).)

Advanced physics courses are offered every two to three semesters; check with the Physics Department for availability.

- This is a sample curriculum only, the order of courses you take could be different depending on your year of entrance.
- All students must take more than 2 credits hours of capstone research.

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Total Hours: 120