**Bachelor of Science Program in Physics**

**Name of Degree:** Bachelor of Science (Physics)

**Abbreviation:** B.Sc. (Physics)

**Curriculum**

**Total Credits** **135 Credits**

**Curriculum Structure**

|  |  |  |
| --- | --- | --- |
|  | **Regular Plan** | **Co-operative Education Plan** |
| General education courses (\*)  | 30 |  30 Credits |
| Required Courses(\*\*)  | 78 |  81 Credits |
| Free Elective Physics Courses (\*\*\*)  | 12 |  12 Credits |
| Elective Courses (\*\*\*\*) | 9 |  6 Credits |
| Free elective Courses | 6 |  6 Credits |
| Total | 135 |  135 Credits |

|  |  |
| --- | --- |
| **First Year , 1st Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 101\* | English for Communication | 3 |
| 311 111\*\* | Biology for Physical Science | 3 |
| 311 112\*\* | Biology for Physical Science Laboratory | 1 |
| 312 101\*\* | General Chemistry I | 3 |
| 312 102\*\* | General Chemistry Laboratory I | 1 |
| 314 121\*\* | Calculus for Physical Science I | 3 |
| 315 102\*\* | General Physics I | 3 |
| 315 181\*\* | General Physics Laboratory I | 1 |
| **Total** | **18** |

|  |  |
| --- | --- |
| **First Year , 2nd Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 102\* | English for Academic Purposes I | 3 |
| 000 146\* | Happiness of Life | 3 |
| 312 103\*\* | General Chemistry II | 3 |
| 312 104\*\* | General Chemistry Laboratory II | 1 |
| 315 103\*\* | General Physics II | 3 |
| 315 182\*\* | General Physics Laboratory II | 1 |
| 315 161\*\* | Principle of Computational Physics | 3 |
| 314 122\*\* | Calculus for Physical Science II | 3 |
| **Total** | **20** |

|  |  |
| --- | --- |
| **Second Year , 1st Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 103\* | English for Academic Purposes II | 3 |
| 314 231\*\* | Differential Equations | 3 |
| 315 204\*\* | Modern Physics | 3 |
| 315 221\*\* | Physics of Vibration and Waves | 3 |
| 315 231\*\* | Optics I | 2 |
| 315 285\*\* | Intermediate Physics Laboratory I | 1 |
| 315 287\*\* | Electronics | 3 |
| **Total** | **18** |

|  |  |
| --- | --- |
| **Second Year , 2nd Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 314 211\*\* | Linear Algebra I | 3 |
| 315 203\*\* | Theoretical Mechanics | 3 |
| 315 206\*\* | Quantum Mechanics I | 3 |
| 315 241\*\* | Thermodynamics and Statistical Physics | 3 |
| 315 260\*\* | Mathematical Methods in Physics | 3 |
| 315 286\*\* | Intermediate Physics Laboratory II | 1 |
| xxx xxx | Free Elective | 3 |
| **Total** | **19** |

|  |  |
| --- | --- |
| **Third Year , 1st Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 050 108\* | English for Sciences | 3 |
| 315 325\*\* | Electromagnetic Theory | 3 |
| 315 346\*\* | Nuclear Physics I | 2 |
| 315 355\*\* | Solid State Physics I | 2 |
| 315 362\*\* | Numerical Methods for Physics I | 2 |
| 315 373\*\* | Astrophysics I | 2 |
| 315 393\*\* | Advanced Physics Laboratory I | 1 |
| xxx xxx | Free Electives | 3 |
| **Total** | **18** |

|  |  |
| --- | --- |
| **Third Year , 2nd Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 130\* | Information Literacy Skills | 3 |
| 000 170\* | Higher-order Thinking in Mathematics and Sciences | 3 |
| 050 106\* | Basic Writing | 3 |
| 315 394\*\* | Advanced Physics Laboratory II | 1 |
| 315 xxx\*\*\* | Free Elective Physics | 6 |
| 315 xxx\*\*\*\* | Electives | 3 |
| **Total** | **19** |

**Regular Plan**

|  |  |
| --- | --- |
| **Fourth Year , 1st Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 145\* | Leadership and Management | 3 |
| 315 494\* | Research Project in Physics I | 2 |
| 315 xxx\*\*\* | Free Elective Physics  | 6 |
| 315 xxx\*\*\*\* | Elective | 3 |
| **Total** | **14** |

|  |  |
| --- | --- |
| **Fourth Year , 2nd Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 132\* | Life and Aesthetics | 3 |
| 315 491\*\* | Seminar in Physics | 1 |
| 315 495\*\* | Research Project in Physics II | 2 |
| 315 xxx\*\*\*\* | Elective | 3 |
| **Total** | **9** |

**Co-operative Education Plan**

|  |  |
| --- | --- |
| **Fourth Year , 1st Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 315 496\*\* | Cooperative Education in Physics | 7 |
| **Total** | **7** |

|  |  |
| --- | --- |
| **Fourth Year , 2nd Semester** | **Number of Credit** |
| **Course Number** | **Course Title** |
| 000 132\* | Life and Aesthetics | 3 |
| 000 145\* | Leadership and Management | 3 |
| 315 491\*\* | Seminar in Physics | 1 |
| 315 xxx\*\*\* | Free Elective Physics |  6 |
| 315 xxx\*\*\*\* | Elective | 3 |
| **Total** | **16** |

**List of Elective (Physics) Subjects**

|  |  |  |
| --- | --- | --- |
| **Course Number** | **Course Title** | **Number of Credit** |
| 315 205\*\*\* | Introduction to Materials Science | 3 |
| 315 313\*\*\* | Quantum Mechanics II | 3 |
| 315 323\*\*\* | Introduction to Nuclear Magnetic Resonance | 3 |
| 315 324\*\*\* | Introduction to Nuclear Magnetic Resonance Imaging | 3 |
| **Course Number** | **Course Title** | **Number of Credit** |
| 315 331\*\*\*  | Optics II | 2 |
| 315 342\*\*\*  | Health Physics | 3 |
| 315 343\*\*\*  | Nuclear Instrumentation and Techniques | 3 |
| 315 345\*\*\* | Radiation Physics | 3 |
| 315 347\*\*\*  | Nuclear Physics II | 2 |
| 315 356\*\*\*  | Solid State Physics II | 2 |
| 315 361\*\*\* | Methods of Theoretical Physics | 3 |
| 315 363\*\*\*  | Numerical Methods for Physics II | 2 |
| 315 364\*\*\* | High Performance Computing I | 3 |
| 315 371\*\*\*  | General Astronomy | 3 |
| 315 372\*\*\*  | Spherical Astronomy | 3 |
| 315 374\*\*\* | Astrophysics II | 2 |
| 315 375\*\*\* | General Relativity | 3 |
| 315 385\*\*\* | Introduction to Scientific Image Processing | 3 |
| 315 389\*\*\* | Digital Electronics and Interfacing | 3 |
| 315 390\*\*\* | Analog Electronics | 3 |
| 315 425\*\*\*  | Applied Optics | 3 |
| 315 442\*\*\*  | Elementary Particle Physics | 3 |
| 315 445\*\*\*  | Physics and Technology of Semiconductor Devices | 3 |
| 315 461\*\*\*  | Theoretical Physics | 3 |
| 315 463\*\*\*  | Symmetry Method | 3 |
| 315 465\*\*\*  | High Performance Computing II | 3 |
| 315 473\*\*\*  | Introduction to Modern Cosmology | 3 |

**List of Elective Subjects**

|  |  |  |
| --- | --- | --- |
| **Course Number** | **Course Title** | **Number of Credit** |
| 315 201\*\*\*\* | Physics of Matters | **3** |
| 315 281\*\*\*\*  | Photography | **3** |
| 315 283\*\*\*\*  | Introduction to Energy Science | **3** |
| 315 284\*\*\*\*  | Meteorology | **3** |
| 315 384\*\*\*\*  | Scientific Drawing and Workshop Practice | **3** |
| 315 403\*\*\*\*  | Quality Standard Systems for Scientists | **2** |
| 315 422\*\*\*\* | Acoustics | **3** |

**Program Lecturers**

1. **Associated Professor Vittaya Amornkitbamrung**
2. **Associated Professor Ekaphan Swatsitang**
3. **Associated Professor Sutham Srilomsak**
4. **Associated Professor Wiwat Youngdee**
5. **Assistant Professor Anusorn Sritheeraviroch**
6. **Assistant Professor Apishok Tangtakarn**
7. **Assistant Professor Chaiyapoj Muthaporn**
8. **Assistant Professor Thanusit Burinprakon**
9. **Assistant Professor Teerayut Channuwong**
10. **Assistant Professor Nath Saowadee**
11. **Assistant Professor Nonglak Meethong**
12. **Assistant Professor Patana Puwanich**
13. **Assistant Professor Pairot Moontragoon**
14. **Assistant Professor Pawinee Klangtakai**
15. **Assistant Professor Pornjuk Srepusharawoot**
16. **Assistant Professor Prasit Thongbai**
17. **Assistant Professor Sriprajak Krongsuk**
18. **Assistant Professor Supree Pinitsoontorn**
19. **Assistant Professor Teerasak Kamwanna**
20. **Assistant Professor Viyada Hanchana**
21. **Assistant Professor Orrarujee Muanwong**
22. **Dr. Chaiyapong Ruangsuwan**
23. **Dr. Kitiyanee Asanok**
24. **Dr. Pimpunyawat Tummuangpak**
25. **Dr. Prasert Kengkan**
26. **Dr. Rattakarn Yensanor**
27. **Dr. Siritorn Buranurak**
28. **Dr. Somporn Khan-ngern**
29. **Dr. Sujitra Dangsakul**
30. **Dr. Theerapong Puangmali**