**Doctor of Philosophy Program in Physics**

**Name of Degree:** Doctor of Philosophy (Physics)

**Abbreviation:** Ph.D. (Physics)

**Admission Requirements**

Type 1.1:

Hold a master’s degree in physics or related fields with a GPA of at least 3.50 **AND** publish at least one paper in National/International Journals.

Type 1.2:

Hold a bachelor’s degree in physics or related fields with a GPA of at least 3.50 **AND** publish at least one paper in International Journals.

Type 2.1:

Hold a master’s degree in physics or related fields

Type 2.2:

Hold a bachelor’s degree in physics or related fields with a GPA of at least 3.50

**Curriculum**

**Total Credits**

Type 1.1 48 Credits

Type 1.2 72 Credits

Type 2.1 48 Credits

Type 2.2 72 Credits

**Curriculum Structure**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subject** | **Number of Credit** | | | |
| **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| Required Courses(\*) | (Non Credit) | (Non Credit) | 12 | 15 |
| Elective Courses(\*\*) | - | - | - | 9 |
| Dissertation | 48 | 72 | 36 | 48 |
| **Total** | 48 | 72 | 48 | 72 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **First Year, 1st Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| 315 701\* | Classical Mechanics | **-** | **-** | **3** | **3** |
| 315 711\* | Quantum Mechanics I | **-** | **-** | **3** | **3** |
| 315 721\* | Classical Electrodynamics I | **-** | **-** | **3** | **3** |
| 315 761\* | Mathematical Methods in Physics I | **-** | **-** | **3** | **3** |
| 315 996 | Dissertation | **-** | **12** | **-** | **-** |
| 315 997 | Dissertation | **9** | **-** | **-** | **-** |
| **Total credits** | | **9** | **12** | **12** | **12** |
| **Cumulative credits** | | **9** | **12** | **12** | **12** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **First Year, 2nd Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| 315 731\* | Statistical Mechanics | **-** | **-** | **-** | **3** |
| Elective Courses | | **-** | **-** | **-** | **6** |
| 301 733\*\* | Molecular Simulations and Applications | - | - | - | 3 |
| 315 712\*\* | Quantum Mechanics II | - | - | - | 3 |
| 315 753\*\* | Selected Topics in Solid State Physics | - | - | - | 3 |
| 315 762\*\* | Mathematical Methods in Physics II | - | - | - | 3 |
| 315 774\*\* | Astronomical Instrumentation and Techniques | - | - | - | 3 |
| 315 781\*\* | Digital Signal Processing | - | - | - | 3 |
| 315 992\* | Seminar on Current Technology | 2 (Non Credit) | 2 (Non Credit) | 2 (Non Credit) | - |
| 315 996 | Dissertation | **-** | **9** | **-** | **-** |
| 315 997 | Dissertation | **9** | **-** | **-** | **-** |
| 315 999 | Dissertation | **-** | **-** | **9** | **-** |
| **Total credits** | | **9** | **9** | **9** | **9** |
| **Cumulative credits** | | **18** | **21** | **21** | **21** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Second Year, 1st Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| Elective Courses | | **-** | **-** | **-** | **3** |
| 301 708\*\* | Computational Materials Science | - | - | - | 3 |
| 301 730\*\* | Selected Topics in Materials Science and Nanotechnology | - | - | - | 3 |
| 315 713\*\* | Selected Topics in Quantum Mechanics | - | - | - | 3 |
| 315 752\*\* | Semiconductor Physics | - | - | - | 3 |
| 315 783\*\* | Theory of Nuclear Magnetic Resonance | - | - | - | 3 |
| 315 996 | Dissertation | **-** | **9** | **-** | **-** |
| 315 997 | Dissertation | **9** | **-** | **-** | **-** |
| 315 998 | Dissertation | **-** | **-** | **-** | **9** |
| 315 999 | Dissertation | **-** | **-** | **9** | **-** |
| **Total credits** | | **9** | **9** | **9** | **12** |
| **Cumulative credits** | | **27** | **30** | **30** | **33** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Second Year, 2nd Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| 315 992\* | Seminar on Current Technology | **-** | **-** | **-** | **2** (Non Credit) |
| 315 991\* | Research Seminar | **2** (Non Credit) | **2** (Non Credit) | **2** (Non Credit) | **-** |
| 315 996 | Dissertation | **-** | **9** | **-** | **-** |
| 315 997 | Dissertation | **9** | **-** | **-** | **-** |
| 315 998 | Dissertation | **-** | **-** | **-** | **9** |
| 315 999 | Dissertation | **-** | **-** | **7** | **-** |
| **Total credits** | | **9** | **9** | **7** | **9** |
| **Cumulative credits** | | **36** | **39** | **37** | **42** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Third Year, 1st Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| 315 996 | Dissertation | **-** | **9** | **-** | **-** |
| 315 997 | Dissertation | **9** | **-** | **-** | **-** |
| 315 998 | Dissertation | **-** | **-** | **-** | **9** |
| 315 999 | Dissertation | **-** | **-** | **9** | **-** |
| **Total credits** | | **9** | **9** | **9** | **9** |
| **Cumulative credits** | | **45** | **48** | **46** | **51** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Third Year, 2nd Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| 315 991\* | Research Seminar | **-** | **-** | **-** | **2** (Non Credit) |
| 315 996 | Dissertation | **-** | **9** | **-** | **-** |
| 315 997 | Dissertation | **3** | **-** | **-** | **-** |
| 315 998 | Dissertation | **-** | **-** | **-** | **7** |
| 315 999 | Dissertation | **-** | **-** | **2** | **-** |
| **Total credits** | | **3** | **9** | **2** | **7** |
| **Cumulative credits** | | **48** | **57** | **48** | **58** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fourth Year, 1st Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| 315 996 | Dissertation | **-** | **9** | **-** | **-** |
| 315 998 | Dissertation | **-** | **-** | **-** | **9** |
| **Total credits** | | **-** | **9** | **-** | **9** |
| **Cumulative credits** | | **-** | **66** | **-** | **67** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fourth Year, 2nd Semester** | | **Number of Credit** | | | |
| **Course Number** | **Course Title** | **Type 1.1** | **Type 1.2** | **Type 2.1** | **Type 2.2** |
| 315 996 | Dissertation | **-** | **6** | **-** | **-** |
| 315 998 | Dissertation | **-** | **-** | **-** | **5** |
| **Total credits** | | **-** | **6** | **-** | **5** |
| **Cumulative credits** | | **-** | **72** | **-** | **72** |

**Program Lecturers**

1. **Associated Professor Vittaya Amornkitbamrung**
2. **Associated Professor Ekaphan Swatsitang**
3. **Associated Professor Wiwat Youngdee**
4. **Assistant Professor Thanusit Burinprakon**
5. **Assistant Professor Sriprajak Krongsuk**
6. **Assistant Professor Orrarujee Muanwong**
7. **Assistant Professor Chaiyapoj Muthaporn**
8. **Assistant Professor Teerasak Kamwanna**
9. **Assistant Professor Pornjuk Srepusharawoot**
10. **Assistant Professor Pairot Moontragoon**
11. **Assistant Professor Prasit Thongbai**