# Institute of FIeld roBOtics

## Doctor of Philosophy Program in Robotics and Automation

This program aims at producing personnel who have fundamental understanding, deep knowledge and ability and expertise in robotics and automation. They should have skills in conducting in-depth research and advanced operational skills in the education and related industrial sectors in robotics and automation. They should be able to apply knowledge to create innovation in response to the needs of robots and automation of the country.

### Applicant Qualifications

1.  A candiadte must hold a master's degree or a bachelor's degree in engineering in robotics and automation, mechanical engineering, electrical engineering, electronics and telecommunications engineering, computer engineering, production engineering,  manufacturing engineering, control system and instrumentation engineering, tool and material engineering, chemical engineering or equivalent with a GPA of 3.0 or higher.
2.  A candidate must hold a master's degree or a bachelor's degree in science in robotics and automation, physics, computer science, mathematics, information technology, statistics, or equivalent with a GPA of 3.0 or higher.
3.  A candiadte must hold a bachelor's degree or master's degree in an equivalent field of study. This will be at the discretion of the faculty members responsible for the program from Institute for Field Robotics (FIBO), King Mongkut's University of Technology Thonburi.
4.  A candidate must have qualifications in accordance with Article 15: Admission, King Mongkut's University of Technology Thonburi on Graduate Studies' Regulations B.E. 2547 (2004).

### Professions after Graduation

1.  Expert teachers/lecturers in fields related to robotics and automation
2.  Expert researchers in research and development departments related to robotics and automation
3.  Expert engineers in industrial factories, business and government organizations related to robotics and automation.
4.  Business operators related to robotics and automation

### Curriculum

| | |
|---|---|
| Plan 1.1 for student with Master degree | 48 Credits |
| Plan 2.1 for student with Master degree | 48 Credits |
| Plan 2.2 for student with Bachelor degree | 75 Credits |

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## Doctor of Philosophy Program in Robotics and Automation

### Curriculum Components

Plan 1.1 for student with Master degree

- Dissertation       48    Credits

Plan.2 1 for student with Master degree

- Compulsory       6    Credits
- Elective Course       6    Credits
- Dissertation       36    Credits

Plan 2.2 for student with Bachelor degree

- Compulsory       15    Credits
- Elective Course       12    Credits
- Dissertation       48    Credits

### COURSE STRUCTURE

#### Plan 1.1 for student with Master degree

**First Year**

| First Semester | Credits |
|---|---|
| FRA 664 Dissertation | 6(0-12-24) |
| Total | 6(0-12-24) |

| Second Semester | Credits |
|---|---|
| FRA 664 Dissertation | 6(0-18-36) |
| Total | 6(0-12-24) |

**Second Year**

| First Semester | Credits |
|---|---|
| FRA 664 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

| Second Semester | Credits |
|---|---|
| FRA 664 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

**Third Year**

| First Semester | Credits |
|---|---|
| FRA 664 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

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## Doctor of Philosophy Program in Robotics and Automation

| Second Semester | Credits |
|---|---|
| FRA 664 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

### Plan 2.1 for student with Master Degree

**First Year**

| First Semester | Credits |
|---|---|
| FRA 660 Engineering Context | 3(0-6-9) |
| FRA XXX Electives 1 | 3(3-0-9) |
| Total | 6(0-12-24) |

| Second Semester | Credits |
|---|---|
| FRA 631 Foundation of Robotics | 3(3-0-9) |
| FRA 663 Dissertation | 3(0-6-12) |
| FRA XXX Electives 2 | 3(3-0-9) |
| Total | 9(6-6-30) |

**Second Year**

| First Semester | Credits |
|---|---|
| FRA 663 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

| Second Semester | Credits |
|---|---|
| FRA 663 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

**Third Year**

| First Semester | Credits |
|---|---|
| FRA 663 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

| Second Semester | Credits |
|---|---|
| FRA 663 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |

### Plan 2.2 for student with Bachelor degree

**First Year**

| First Semester | Credits |
|---|---|
| FRA 630 About Robotics | (3-0-9) |
| FRA 640 Fundamental Mathematics for Robotics | 3(3-0-9) |

| | |
|---|---|
| FRA 641 Computer Programming for Robotics | 3(3-0-9) |
| FRA 660 Engineering Context | 3(0-6-9) |
| Total | 12(9-6-36) |
| **Second Semester** | **Credits** |
| FRA 631 Foundation of Robotics | 3(3-0-9) |
| FRA XXX Electives1 | 3(3-0-9) |
| FRA XXX Electives2 | 3(3-0-9) |
| Total | 9(9-0-27) |
| **Second Year** | |
| **First Semester** | **Credits** |
| FRA XXX Electives3 | 3(3-0-9) |
| FRA XXX Electives4 | 3(3-0-9) |
| FRA 664 Dissertation | 3(0-6-12) |
| Total | 9(6-6-30) |
| **Second Semester** | **Credits** |
| FRA 664 Dissertation | 9(0-18-36) |
| Total | 9(0-18-36) |
| **Third Year** | |
| **First Semester** | **Credits** |
| FRA 664 Dissertation | 6(0-12-24) |
| Total | 6(0-12-24) |
| **Second Semester** | **Credits** |
| FRA 664 Dissertation | 6(0-12-24) |
| Total | 6(0-12-24) |
| **Forth Year** | |
| **First Semester** | **Credits** |
| FRA 664 Dissertation | 6(0-12-24) |
| Total | 6(0-12-24) |
| **Second Semester** | **Credits** |
| FRA 664 Dissertation | 6(0-12-24) |
| Total | 6(0-12-24) |

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## Doctor of Philosophy Program in Robotics and Automation

**Fifth Year**

| First Semester | Credits |
|---|---|
| FRA 664 Dissertation | 6(0-12-24) |
| Total | 6(0-12-24) |
| **Second Semester** | **Credits** |
| FRA 664 Dissertation | 6(0-12-24) |
| Total | 6(0-12-24) |