

北陸先端科学技術大学院大学研究室教育指針
Laboratory Education Guideline

研究室教育指針は、学則第30条の3に基づき、研究指導の方法及び内容並びに修了までの研究指導の計画をあらかじめ明示するものです。
Based on the Article 30-3 of the general academic rules, the Laboratory Education Guideline is intended to clearly outline the methods and content of research guidance, as well as the plan for research guidance until completion.

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1. 研究テーマ / Research Theme
We conduct research on methods and tools for scientifically ensuring the safety and reliability of software and systems using formal methods and formal verification. In particular, we focus on complex embedded systems and automotive systems, and aim to realize correct software and its industrial application through the practical use of techniques such as model checking, theorem proving, formal specification, and testing.
2. 修得が期待される能力 / Competencies expected to be acquired 研究室教育は必修 A 科目（先端）又は研究支援科目（融合）の一部として単位化されており、この欄はそれら科目のシラバス上の達成目標の一部となります。 Laboratory Education is accredited as a part of the Required courses A (Division of Advanced Science and Technology) or Research Support Courses (Division of Transdisciplinary Sciences), and this section constitutes a part of the course goals stated in the syllabus for such subjects.
Based on logical thinking and abstraction skills, students will acquire methodologies of software engineering, in particular system verification using formal methods. They will develop the ability to identify problems in complex real-world systems and solve them in a scientific manner. In addition, students will gain the capability to systematically analyze issues related to safety and reliability and to propose solutions using practical verification techniques.
3. 研究指導方針 / Research Guiding Principle
In this laboratory, we focus on students' ability to understand the essence of their research topics and to approach problem solving in a scientific manner. In the early stages of research, discussions are frequently conducted based on concrete examples. From the middle stage onward, research is deepened through regular presentations and discussions of progress and findings. Through this process, we aim to develop individuals who can address real-world problems within their research.
4. 研究室活動の内容及び方法 / Content and Methods of Laboratory Activities
<input type="checkbox"/> 日次活動 / Daily Activities : Individual research activities by students and discussions with laboratory members. <input type="checkbox"/> 週次活動 / Weekly Activities : Weekly laboratory seminars for reporting research progress (once per week). <input type="checkbox"/> 月次活動 / Monthly Activities : <input type="checkbox"/> 不定期活動 / Occasional Activities : Presentations at international and domestic conferences; discussions and advice through individual meetings; joint seminars with researchers inside and outside the university; and participation in joint research projects.
5. 年間スケジュール / Annual Schedule 本学の全学共通の年間スケジュールは「履修案内」の「学位取得に至るスケジュール」を参照してください。（本学HP参照：ホーム>教育>履修関係>履修案内） Please refer to the “Degree conferment schedule for the master’s program/doctoral program” in the “Degree Completion Guide” for university-wide common schedule (JAIST website: Home >Education>Taking Courses>Degree Completion Guide)

Immediately after being assigned to the laboratory, students participate in laboratory seminars to understand the research conducted by senior students, while also concentrating on earning course credits according to their study plan. Approximately two to three months after assignment, students discuss their interests and aptitudes with their supervisor, determine a concrete research topic, and conduct a survey of related work. By the end of the first year, students prepare a research proposal and proceed with their research toward the midterm presentation. At the midterm presentation, remaining research issues are clarified, and adjustments to the research direction as well as the goals to be achieved by the final defense are determined. Toward the final defense, students consolidate their research results and engage in thesis and preparation for the presentation.