

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
AI and robotics vision-guided manipulation and autonomous navigation design and fabrication of intelligent mechanical systems
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.
Ability to calculate the movement of robots for a given input. Ability to model a wide variety of robots using robot simulation platforms and conduct an in-depth analysis of articulated, whole-body movements. Ability to visualize the trajectory of robots with complicated interactions under various environmental conditions. Ability to plan the desired behavior of robots and to apply the latest control theory to execute the plan as intended. Ability to control simulated and real robots using PCs and microprocessors. Ability to control robots and devices across wired and wireless networks. Ability to control the movements of robot swarms to coordinate tasks in a distributed manner. Ability to implement theory of AI and computer science to make robots smarter. Ability to manipulate unknown objects using a vision sensor. Ability to construct a map of an unknown environment while simultaneously estimating the robot's position within that environment in a dynamic setting. Comprehensive research capability to elucidate the information processing process linking the perception to body movement.
3. 研究指導方針 / Research Guiding Principle
Within the framework of research projects aiming at improving robotics technology and its real-world applications, students explore different topics and are responsible for conducting themselves in achieving their goals. Multi-faceted and flexible viewpoints and innovative thoughts are cultivated through communications with other members and teamwork and collaboration. Students are encouraged to utilize the software and hardware resources available in the laboratory and enjoy implementing half-baked ideas and new concepts. Seminars and progress meetings are held periodically. Occasionally, we also hold project team meetings. Overall, students conduct research on their own initiative under flextime in an atmosphere of freedom.
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 : <input type="checkbox"/> 週次活動 / Weekly Activities : Progress report meetings (every Friday 15:00~) <input type="checkbox"/> 月次活動 / Monthly Activities : <input type="checkbox"/> 不定期活動 / Occasional Activities : Individual meetings (as needed), International conference presentations
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)

Lab-wide schedules are not created. Each student sets their own milestones to achieve optimal learning individually and progresses with their research at their own pace. It aligns with the series of steps for the targeted international conference: submission, review, acceptance, final manuscript, and oral presentation. It also aligns with the series of steps for the targeted international journal: submission, review, revision and rebuttal, acceptance, proofreading, and publication.