

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
<p>This laboratory conducts research in the field of Human-Computer Interaction (HCI), with a particular focus on technology-oriented HCI that leverages information technologies and hands-on prototyping. Rather than centering on evaluation-driven studies rooted in cognitive science or psychology, we emphasize an engineering-oriented approach that proposes, builds, and evaluates novel display and interface technologies.</p> <p>Our research does not begin from existing computing systems or algorithms, but from a research vision of future display and interface technologies. This vision is continuously discussed and refined within the laboratory, and serves as a foundation from which individual technologies and interactive systems are derived.</p> <p>Specifically, we explore new display and interface technologies involving multiple human senses, such as vision, touch, and hearing, and realize them as functional, experienceable prototypes. Through demonstrations, exhibitions, and evaluation studies, we examine their novelty and usefulness from a human-centered perspective and disseminate the outcomes as academic contributions.</p> <p>In addition, the laboratory conducts applied research in healthcare, disaster prevention, and education, collaborating with domain experts such as firefighters, emergency medical technicians, and educators to address real-world challenges.</p>
2. 修得が期待される能力 / Competencies expected to be acquired
<p>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。</p> <p>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.</p>
<p>The ability to understand a human-centered research vision from a technology-oriented HCI perspective and articulate it as one's own research topic. The ability to conceive novel interaction ideas and technical concepts based on a vision of future display and interface technologies. Practical technical skills to implement and iteratively refine integrated prototype systems combining hardware and software. The ability to plan, conduct, and academically analyze performance evaluations and user experience studies using developed prototypes. The ability to disseminate research outcomes through demonstrations, exhibitions, academic presentations, and scholarly publications. An attitude of engaging with societal challenges and adhering to research ethics through collaborative projects with domain experts.</p>
3. 研究指導方針 / Research Guiding Principle
<p>In the Sato Laboratory, research supervision is conducted with an emphasis not only on the completion of a master's thesis, but also on the dissemination of research outcomes through external academic presentations at domestic and international conferences. By engaging in external dissemination, students are encouraged to improve the quality of their research while experiencing the enjoyment and sense of achievement that research activities can offer.</p> <p>To make effective use of the limited two-year master's program, the laboratory encourages students to begin research activities at an early stage. Wherever possible, laboratory assignments are made early, and students whose assignments are confirmed are supported in starting research smoothly through the preparation of working environments and early-</p>

stage idea generation.

Research topics are explored from an early stage through discussions involving faculty members and senior students. Students' individual interests, experiences, and personal curiosities are respected, and everyday hobbies or concerns may serve as the basis for research topics. Through such dialogue, research directions are clarified, enabling students to engage in prototyping and concrete exploration relatively early in their studies.

The laboratory also encourages students to aim for **external research presentations during the first year of the master's program**. Through iterative prototyping and continuous discussions between students and faculty, students work toward presentations at domestic conferences such as WISS and the IPSJ Interaction symposium. For students with strong interests or experience in implementation, challenges to international conferences such as SIGGRAPH/Laval Virtual and UIST/CHI are also considered, with appropriate guidance and support.

With this approach, research topics are typically well developed by the end of the first year, allowing students in the second year to proceed with evaluation experiments and thesis writing with greater flexibility. Depending on research progress and outcomes, students may also aim for full paper presentations at conferences or submissions to academic journals.

In addition, based on individual progress and aspirations, students may consider **early completion of the master's program or advancement to the doctoral program**, and such challenges are welcomed through consultation with faculty members.

4. 研究室活動の内容及び方法 / Content and Methods of Laboratory Activities

日次活動 / Daily Activities : Students are generally encouraged to spend afternoons working primarily in the laboratory.

週次活動 / Weekly Activities : A weekly seminar is held. In addition, research project-based meetings and technical workshops are conducted, involving collaborating faculty members and student teams from other universities.

月次活動 / Monthly Activities : No regular monthly activities are scheduled.

不定期活動 / Occasional Activities : These include hands-on workshops and hackathon-style camps held during long vacation periods with student teams from other universities, in-lab demonstration sessions, exhibition activities at science museums and similar venues, participation in external exhibition events such as Maker Faire Tokyo (MFT), and laboratory-wide cleaning activities.

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)

During the first year of the master's program, students begin research activities immediately after joining the laboratory, including technical workshops, reading papers in related fields, and idea generation. Research is conducted in collaboration with affiliated faculty members and student teams from other universities. From August onward, after coursework has largely settled (during the summer break period), students work toward their first external research presentations. Specifically, they engage in idea generation, concept development, and initial prototyping, aiming for demonstration presentations at the Workshop on Interactive Systems and Software (WISS) organized by the Japan Society for Software Science and Technology around late October, and at the IPSJ Interaction symposium (demo or poster presentations) around December.

During this period, students may either pursue the creation of their own new research topics or choose to participate in ongoing research projects led by senior students. In the latter case, students share the research concepts and technical background of the existing projects, and collaboratively conduct implementation, evaluation, and paper writing with senior students, aiming for co-authored external presentations from the first year of the master's program. Regardless of the chosen approach, students prepare a research proposal by the end of December, clarifying possible extensions of existing research and future research directions.

During the second year of the master's program, students aim for external presentations such as short papers at WISS (with submission deadlines in late August) and at the IPSJ Interaction symposium in mid-October. Emphasis is placed on improving the completeness of implementations and developing applications. These implementations are expected to be completed by the end of November, after which students proceed with conference presentations (oral presentations), evaluation experiments using the developed systems, and the writing of the master's thesis.