

2026 年度シラバス

科目分類/Subject Categories			
学部等/Faculty	/大学院工芸科学研究科（博士前期課程）/大学院工芸科学研究科（博士前期課程）： /Graduate School of Science and Technology (Master's Programs)/Graduate School of Science and Technology (Master's Programs)	今年度開講/Availability	/有/有 : /Available/Available
学域等/Field	/独立専攻/独立専攻 : /Fibro/BBM/Fibro/BBM	年次/Year	/2年次/2年次 : /2nd Year/2nd Year
課程等/Program	/先端ファイブ科学専攻/先端ファイブ科学専攻 : /Master's Program of Advanced Fibro-Science/Master's Program of Advanced Fibro-Science	学期/Semester	/春学期/秋学期 : /Spring term/Fall term
分類/Category	/授業科目/授業科目 : /Courses/Courses	曜日時限/Day & Period	/集中 : /Intensive

科目情報/Course Information				
時間割番号 /Timetable Number	65109912			
科目番号 /Course Number	65160251			
単位数/Credits	4			
授業形態 /Course Type	実験 : Lab			
クラス/Class				
授業科目名 /Course Title	先端ファイブ科学特別実験及び演習 : Advanced Fibro Science Seminar and Research			
担当教員名 / Instructor(s)	/先端ファイブ科学専攻関係教員////////桑原 教彰/奥林 里子/佐久間 淳/山田 和志/大谷 章夫/石井 佑弥/井野 晴洋/山下 直之/崔 童殷/SIRIARAYA PANOTE : /Program-affiliated faculty members /KUWAHARA Noriaki/OKUBAYASHI Satoko/SAKUMA Atsushi/YAMADA Kazushi/OHTANI Akiyo/ISHII Yuya/INO Haruhiro/YAMASHITA Naoyuki/CHOI DONGEUN/SIRIARAYA PANOTE			
その他/Other	インターンシップ実施 科目 /Internship	国際科学技術コース提供 科目 /IGP	PBL 実施科目 /Project Based Learning	DX 活用科目 /ICT Usage in Learning
	実務経験のある教員による 科目 /Practical Teacher		○	
科目ナンバリング /Numbering Code				

授業の目的・概要 /Objectives and Outline of the Course	
日	This is the research activity oriented to student's theme of Master course thesis. Students learn the experimental design, the way of writing their idea. Student's supervisor organized plan of this lecture.
英	This is the research activity oriented to student's theme of Master course thesis. Students learn the experimental design, the way of writing their idea. Student's supervisor organized plan of this lecture.

学習の到達目標 /Learning Objectives	
日	先端ファイブ科学専攻の研究内容を理解する
英	Understanding of research themes in the department of Advanced Fibro-Science

学習目標の達成度の評価基準 / Fulfillment of Course Goals (JABEE 関連科目のみ)	
日	
英	

授業計画項目 /Course Plan			
No.		項目 Topics	内容 Content
1	日	Yarn and fabric structure	To learn the fundamental yarn twist, weave structure by the experimental works.
	英	Yarn and fabric structure	To learn the fundamental yarn twist, weave structure by the experimental works.
2	日	Experiment and analysis of fabric mechanical properties	To learn the fabric surface and mechanical properties using KES- fabric evaluation system.
	英	Experiment and analysis of fabric mechanical properties	To learn the fabric surface and mechanical properties using KES- fabric evaluation system.
3	日	Mechanical property of plastics and composites	To learn measurement method and analysis of mechanical property of plastics and composites
	英	Mechanical property of plastics and composites	To learn measurement method and analysis of mechanical property of plastics and composites
4	日	Evaluation of durability of industrial products	To learn evaluation method of durability of industrial products considering material property and degradation factor
	英	Evaluation of durability of industrial products	To learn evaluation method of durability of industrial products considering material property and degradation factor
5	日	Concepts of Universal Design 1	To learn some products and services based on the concept on universal design.
	英	Concepts of Universal Design 1	Concepts of Universal Design 1
6	日	Concepts of Universal Design 2	To learn some products and services based on the concept on universal design.
	英	Concepts of Universal Design 2	To learn some products and services based on the concept on universal design.
7	日	Physical experiment of material deformation	Experiment for the physical analysis of deformation in soft material is carried out.
	英	Physical experiment of material deformation	Experiment for the physical analysis of deformation in soft material is carried out.
8	日	Physical analysis of material deformation	The physical analysis of deformation in soft material is carried out.
	英	Physical analysis of material deformation	The physical analysis of deformation in soft material is carried out.
9	日	Study on the deformation behavior analysis of the textile structure that takes i	Textile structure has a complicated heterogeneity across multiple stages as configured in the single yarn filaments are gathered intersect each other. To learn on numerical analysis method that can represent the mechanical behavior of the fabric structure
	英	Study on the deformation behavior analysis of the textile structure that takes into account the heterogeneous structure	Textile structure has a complicated heterogeneity across multiple stages as configured in the single yarn filaments are gathered intersect each other. To learn on numerical analysis method that can represent the mechanical behavior of the fabric structure
10	日	Studies on the fiber orientation analysis in the injection molding using a compo	The injection molded article of composite material containing short fibers is an important design factor fiber orientation determines the mechanical properties of the molded article. To learn on method to predict the fiber orientation by using a numerical
	英	Studies on the fiber orientation analysis in the injection molding using a composite material	The injection molded article of composite material containing short fibers is an important design factor fiber orientation determines the mechanical properties of the molded article. To learn on method to predict the fiber orientation by using a numerical
11	日	Experiment on Vital Data Monitoring by Using Wearable Sensor	Directing the experiments of data collection and data analysis for vital data monitoring by using wearable sensor
	英	Experiment on Vital Data	Directing the experiments of data collection and data analysis for vital data

		Monitoring by Using Wearable Sensor	monitoring by using wearable sensor
12	日	Experiment on Evaluating Care Burden by Using Information Technology	Directing the experiments of data collection and data analysis for evaluating care burden by using information technology
	英	Experiment on Evaluating Care Burden by Using Information Technology	Directing the experiments of data collection and data analysis for evaluating care burden by using information technology
13	日	Functionalization of fibers using supercritical CO2	To study functionalization of fibers applying supercritical CO2 that diffuses such gas and carry materials such liquid.
	英	Functionalization of fibers using supercritical CO2	To study functionalization of fibers applying supercritical CO2 that diffuses such gas and carry materials such liquid.
14	日	Functionalization of fibers using electron-beam irradiation technique	To study functionalization of fibers applying electron-beam irradiation that provide giant energy at a moment
	英	Functionalization of fibers using electron-beam irradiation technique	To study functionalization of fibers applying electron-beam irradiation that provide giant energy at a moment
15	日	Summary	This lecture is summarized by all contents.
	英	Summary	This lecture is summarized by all contents.

履修条件 /Prerequisite(s)

日	
英	

授業時間外学習（予習・復習等） /Required study time, Preparation and review

日	Study time: 90 h Initial competences: • Basic knowledge of engineering sciences
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教科書／参考書 /Textbooks/Reference Books

日	特になし
英	Not in particular

成績評価の方法及び基準 /Grading Policy

日	The situations of practice and Effort in seminar and research are evaluated for score. Their scholastic performance should be more than 60pt.
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留意事項等 /Point to consider

日	Teaching language is English. Understand research ethics.
英	Teaching language is English. Understand research ethics.