

## 2025 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）： /Graduate School of Science and Technology (Master's Programs)	今年度開講/Availability	/有：/Available
学域等/Field	/独立専攻：/Fibro/BBM	年次/Year	/1～2年次：/1st through 2nd Year
課程等/Program	/先端ファイブ科学専攻：/Master's Program of Advanced Fibro-Science	学期/Semester	/秋学期：/Fall term
分類/Category	/授業科目：/Courses	曜日時限/Day & Period	/集中：/Intensive

科目情報/Course Information				
時間割番号 /Timetable Number	65119919			
科目番号 /Course Number	65160204			
単位数/Credits	2			
授業形態 /Course Type	講義：Lecture			
クラス/Class				
授業科目名 /Course Title	先端テキスタイル加工－仕上げ：Advanced and Specialized Textile Processing - Finishing			
担当教員名 / Instructor(s)	/奥林 里子/(Jakub Wiener)：OKUBAYASHI Satoko/Jakub Wiener			
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	M_AF6111			

授業の目的・概要 Objectives and Outline of the Course	
日	<p>The aim of this course unit is to educate the students on the main aspects of finishing of textile materials. Keywords: Finishing, printing, washing, drying including developments and innovations Final competences:</p> <p>1 Theoretical knowledge on:</p> <ul style="list-style-type: none"> <li>• Basic concepts of finishing: preparation, process steps, auxiliary products</li> <li>• Thermodynamics and kinetics of finishing processes</li> <li>• Finishing and printing machinery and components</li> </ul> <p>2 Insights in:</p> <ul style="list-style-type: none"> <li>• Finishing principles and interpretation of finishing processes</li> <li>• Advantages and disadvantages of different approaches</li> </ul>
英	<p>The aim of this course unit is to educate the students on the main aspects of finishing of textile materials. Keywords: Finishing, printing, washing, drying including developments and innovations Final competences:</p> <p>1 Theoretical knowledge on:</p> <ul style="list-style-type: none"> <li>• Basic concepts of finishing: preparation, process steps, auxiliary products</li> <li>• Thermodynamics and kinetics of finishing processes</li> <li>• Finishing and printing machinery and components</li> </ul> <p>2 Insights in:</p> <ul style="list-style-type: none"> <li>• Finishing principles and interpretation of finishing processes</li> </ul>

	• Advantages and disadvantages of different approaches
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学習の到達目標 Learning Objectives	
日	Theoretical knowledge on: Basic concepts of finishing: process steps, principles of finishing processes Theoretical knowledge on: Basic principles of colorants application in textile printing Theoretical knowledge on: Water and energy consumption by textile finishing processes Theoretical knowledge on: Selected finishing and printing machinery
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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	Fabric Preparation	Fabric Preparation
	英	Fabric Preparation	Fabric Preparation
2	日	Use of Auxiliaries	Use of Auxiliaries
	英	Use of Auxiliaries	Use of Auxiliaries
3	日	Wool Finishing	Wool Finishing
	英	Wool Finishing	Wool Finishing
4	日	Use of Enzymes	Use of Enzymes
	英	Use of Enzymes	Use of Enzymes
5	日	Textile Printing 1	Chemical Part: thickeners, pigments, discharge, resist, innovations
	英	Textile Printing 1	Textile Printing 1
6	日	Textile Printing 2	Mechanical Part: rotary screen, paste delivery, squeegee systems, production of screens, fixation, future developments
	英	Textile Printing 2	Mechanical Part: rotary screen, paste delivery, squeegee systems, production of screens, fixation, future developments
7	日	Textile Printing 3	Mechanical Part: rotary screen, paste delivery, squeegee systems, production of screens, fixation, future developments
	英	Textile Printing 3	Mechanical Part: rotary screen, paste delivery, squeegee systems, production of screens, fixation, future developments
8	日	Textile printing 4	Specialty: transfer, ink jet (principles, ink and substrates, sampling and full scale production, trends)
	英	Textile printing 4	Specialty: transfer, ink jet (principles, ink and substrates, sampling and full scale production, trends)
9	日	Textile printing 5	Specialty: transfer, ink jet (principles, ink and substrates, sampling and full scale production, trends)
	英	Textile printing 5	Specialty: transfer, ink jet (principles, ink and substrates, sampling and full scale production, trends)
10	日	Water in Textile Industry 1	Quality
	英	Water in Textile Industry 1	Quality
11	日	Water in Textile Industry 2	Water treatment
	英	Water in Textile Industry 2	Water treatment
12	日	Textile washing 1	Theory, laundry, washing agents
	英	Textile washing 1	Theory, laundry, washing agents
13	日	Textile washing 2	Ttechnology, machines
	英	Textile washing 2	Ttechnology, machines
14	日	Drying 1	Theory, mechanical water removal

	英	Drying 1	Theory, mechanical water removal
15	日	Drying 2	Thermal drying, dryers, new developments
	英	Drying 2	Thermal drying, dryers, new developments

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	Initial competences: <ul style="list-style-type: none"> <li>• Basic chemistry at bachelor level including analytical chemistry physical chemistry, organic chemistry and polymer chemistry</li> <li>• Basic material science at bachelor level</li> </ul>
英	Initial competences: <ul style="list-style-type: none"> <li>• Basic chemistry at bachelor level including analytical chemistry physical chemistry, organic chemistry and polymer chemistry</li> <li>• Basic material science at bachelor level</li> </ul>

教科書／参考書 Textbooks/Reference Books	
日	Chemical Finishing of Textiles 1st Edition, by W D Schindler P J Hauser, ISBN: 9781855739055 Slides and hand-out aew provided during the course and are available on Ufora
英	Chemical Finishing of Textiles 1st Edition, by W D Schindler P J Hauser, ISBN: 9781855739055 Slides and hand-out aew provided during the course and are available on Ufora

成績評価の方法及び基準 Grading Policy	
日	End-of-term evaluation Examination methods in case of periodic evaluation during the first examination period: Written Examination Examination methods in case of periodic evaluation during the second examination period: Written Examination
英	End-of-term evaluation Examination methods in case of periodic evaluation during the first examination period: Written Examination Examination methods in case of periodic evaluation during the second examination period: Written Examination

留意事項等 Point to consider	
日	Teaching language is English. Intensive course
英	Teaching language is English. Intensive course