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Ministry of Education and Sports

Savannakhet University

Faculty of agriculture and Environment

No _____/FOA

Savannakhet, Date ____/___/2022

Course Syllabus

1 Program

Title of the study programme: *Master of Science in Forest Resource Management (MSc in FRM)*

2 Course details

Course name: *Technology of Wood Processing (Shawn Wood, Furniture, Glue Stick, Baked Wood, and Paper Production)*

Course code: FOA04TWC12106

Number of credits (hours/week): *3(2-2-2)*

Course type (tick the appropriate box): ☒ Required, ☐ Elective, ☐ Other, if other please explain:

Prerequisites courses: *None*

Semester, in which the course is taught: *tick the appropriate box below*

Year 1		Year 2	
Semester 1	**Semester 2**	**Semester 1**	**Semester 2**
☐	☒	☐	☐

3 Responsible unit

3.1 Department:

Name of lecturer 01: Dr. Bounheaung NINCHALEUNE (SKU), Phone: +85620 55555921. Email: bnincha@yahoo.com; Office location: Savannakhet University, Savannakhet Province, Lao PDR, permanent lecturer.

Name of lecturer 02: Bounyore KOULAVONG (SKU), Phone: +85620 55959557. Email: bounyore_max@yahoo.com; Office location: Savannakhet University, Nongpeua Campus, Savannakhet Province, Lao PDR, permanent lecturer.

4 Course description

Graduates of the course have a comprehensive knowledge of all basic disciplines in Technology of Wood Processing. Graduates shall acquire knowledge on Sampling plans for acceptance inspection and for the control of wood production processes. Introduction to the application of reliability techniques and life testing

5 Course objectives

After graduation of the course, students will be able to understand and apply knowledge Technology of Wood Processing as: Shawn Wood, Furniture, Glue Stick, Baked Wood, and Paper Production), Cross-cutting, Grading and sorting, Laminating, Molding, Planing, Rip sawing, Sanding, Coating and painting, Repairing and finishing and etc.

Knowledge:

Graduates shall apply solid knowledge on woodworking skills through lecture, demonstration and practical application. The course concept covers wood engineering, timber building construction, the building shell, interior construction, processing and manufacturing technologies, product development and business management. Graduates will complete a series of projects of increasing complexity and detail, which will impart not only the techniques required to cut and process panels and solid stock, produce accurate joinery and assemble finished pieces, but also the skills required to do so in an efficient and cost-effective manner. Graduates will learn to work both as an individual craftsperson and as a part of a highly skilled team.

Skills:

Graduates shall be able to be wood engineers who occupy management positions in industry are responsible for developing intelligent products made from wood and wood composite materials. Your job as a wood engineer is to find solutions. You will be working on timber constructions, planning wood manufacturing processes and developing functional, cost-effective products. The programme is unique and is based closely on the requirements and needs of the wood industry and related sectors. With their specialist knowledge and good communications skills our graduates are in great demand in all related area.

Theories application in practice:

Graduates shall be able to apply and contribute theories to technical development of material properties, manufacturing processes, measurement technology and sorting criteria for bio-based materials and products with experts in the specific field. They will be able to communicate and present results in speech and writing that meet accepted research ethics principles.

Social knowledge and skills:

In case of need graduates shall be able to pursue a career in material science, engineering, computer science, material processing, wood finishing, product design, quality control, or sales and marketing or go on to graduate studies in wood science, finance and business, building construction technology, or medicine.

Graduates shall be able to acquire new knowledge in all wood processing disciplines and wood engineering, which is a key component for wood production. As a Wood Products Processing graduate, Graduates will be highly sought after by employers and able to secure entry-level and middle-management positions with excellent starting salaries and opportunities for advancement. Begin your career as a business analyst, a design engineer, a production manager, a process control analyst, or a product developer.

5.1 Learning objectives of particular modules

After completing the module, participants will be able to:

Module 1: Introduction to wood processing technique

Graduates shall be able to understand and discuss the concept of wood processing technique and the process in wood production.

Module 2: Forest and forestry for a sustainable environment

Graduates shall be able to understand and apply their knowledge on sustainable forest management in their case study (journal paper)

Module 3: The sawmill process

Graduates shall be able to apply theories in class to do laboratory on sawmill process as: *Cross-cutting, Grading and sorting, Laminating, Molding, Planing, Rip sawing, Sanding, Coating and painting, Repairing and finishing and etc.*

Module 4: Environmental aspects in the forest industry

Graduates shall be able to understand and critique paper on environmental aspects in the forest industry.

Module 5: Bio-based materials for construction and housing

Graduates shall be able to understand the concept of bio-based materials for construction and housing

Module 6: Wood in buildings moisture and fire properties

Graduates shall be able to acquire knowledge on Wood in buildings moisture and fire properties.

Module 7: Scientific writing

Graduates shall be able to apply their knowledge in technology of wood processing on scientific writing in wood processing from class work/essay.

6 Course teaching methods

The course consists of theoretical and practical lectures. The lectures form the background to develop and to train the knowledge of these technology of wood processing. Graduates are required to develop class projects and/or report. Field practice will be applied in laboratory and field study will be visited to Wood processing companies,

7 Teaching plan

Specify the teaching plan for each week of the course, including the methods used to relay information to the students and the number of hours spent on the subjects

Week	Content	Method/activity	Hour
1-2	**Theories**		
	Module 1: Introduction to wood processing technique	Lecturing, Classroom discussion	4
	Practice		

	Module 1: Introduction to wood processing technique **Quiz: Focusing on the instruments**	Assignments	4
3-4	**Theories**		
	Module 2: Forest and forestry for a sustainable environment	Classroom discussion, Journaling	4
	Practice		
	Module 2: Forest and forestry for a sustainable environment **Quiz: Focusing on the instruments**	Lecturing, Case studies, Student presentations	4
5-6	**Theories**		
	Module 3: The sawmill process	Lecturing, Guest speakers, Student presentations, Video lessons.	4
	Practice		
	Module 3: The sawmill process	Labruratory experiments,	4

7-8	**Theories**		
	Module 4: Environmental aspects in the forest industry	Lecturing, Classroom discussion	4
	Practice		
	Module 4: Environmental aspects in the forest industry **Quiz: Focusing on the instruments**	Laboratory experiments,	4
8-9	**Theories**		
	Module 5: Bio-based materials for construction and housing	Lecturing, Classroom discussion	4
	Practice		
	Module 5: Bio-based materials for construction and housing **Quiz: Focusing on the instruments**	Laboratory experiments,	4
9-11	**Theories**		
	Module 6: Wood in buildings moisture and fire properties	Lecturing, Classroom discussion	4
	Practice		

	Module 6: Wood in buildings moisture and fire properties	Instruction, group discussion and group presentation	4
	Quiz: Focusing on the instruments		
	Field Trip		
	Module 6: Field Trip	Field trip to wood processing companies and related organization	32
12-14	**Theories**		
	Module 7: Scientific writing	Lecturing, Classroom discussion	4
	Practice		
	Module 7: Scientific writing	Instruction, group discussion and group presentation	4
17-18	**Conclusion and review**	Lecture and discussion	1
	Review/additional week	-	**2**
	Final examination	-	3

8. Material needs

8.1 Course equipment: link to equipment needs/purchases as part of the project

Plunge Router, Spray Painting Machine, Jigsaw saw machine, Sliding Compound Miter Saw, Hand Circular Saws, Hand Drill , Belt Sander, MOISTURE METER, Digital weighing scale FC-si/FC-I, meters tape, Table Circular Saws, Band Saw, wood combined planer-thicknesser, Circular Saws, Electric Kilns, Wood Door Design Processing, Computer Control Wood Testing Machine+Static Bending Test, Notebook, calculator, mobile phone, internet wifi.

9. References

9.1 Compulsory reading list

9.2. Suggested reading list

- Libraries
- Website-internet

10. Assessment of students

10.1. Description of assessment

- lecturing
- Assignment providing and submitting report

(Briefly describe the assignment topics relating to the course that are planning to give to students)

10.2. Grade Distribution and student assessment

✧ Grade Distribution

- ❖ Attendance 10 %
- ❖ Reporting 35 %
- ❖ Midterm examination 20 %
- ❖ Final examination 35 %

✧ Grading Scale

Score level	Meaning		Total score	Scale
Symbol	(Lao)	(English)		
A	ດີເລີດ	(Excellent)	80-100	4,00

B+	ດີຫຼາຍ	(Very Good)	75-79	3,50
B	ດີ	(Good)	70-74	3,00
C+	ດີພໍໃຊ້	(Fairly Good)	65-69	2,50
C	ພໍໃຊ້ໄດ້	(Fair)	60-64	2,00
D+	ອ່ອນ	(Poor)	55-59	1,50
D	ອ່ອນຫຼາຍ	(Very Poor)	50-54	1,00
F	ຕົກ	(Fail)	0-49	0,00
I	ບໍ່ສົມບູນ (ຮຽນບໍ່ຄົບ)	(Incomplete)		

Savannakhet, Date ...../...../.....

Head of Department (responsible lecturer) Course instructor

Dean of the Faculty of Agriculture and Environment