





doing exercise and sports. Techniques in volleyball are provided. Tests standards are according to the regulations of the Ministry of Education and Training.

### **11. General English 2**

Code: 213604 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Improve and complete basic grammar sections. New knowledge of exam questions, exam contents, skills for English test at the intermediate level.

### **12. History of Vietnamese communist party**

Code: 200105 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The founding of the Communist Party of Vietnam; The Party's first political platform; the Party's revolutionary lines from the people's democratic revolution to the socialist revolutionary socialism.

### **13. Probability and Statistics**

Code: 202121 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Providing knowledge of statistical theories, particularly in concepts of random unheaval, definition of statistics, statistical formulas; providing for student concepts of sampling, population, measurable parameter equations, verifying statistical hypothesis and analyzing regression correlating.

### **14. General Law**

Code: 202622 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The State and law, simultaneously a connection with the State and law of the Socialist Republic of Vietnam.

### **15. Technical drawing 1**

Code: 207138 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Technical drawing module 1 provides students with knowledge about representing points, lines, planes, projections of some basic geometric blocks and some common intersections in engineering; standards for the presentation of technical drawings; drawing geometry, orthogonal views, axes projections and sections.

### **16. General Informatics**

Code: 214103 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Providing for students basic knowledge of computer science and such softwave as winword, excel and internet; helping students understand how to use computers correctly and can apply software in their learning process effectively.

### **17. Communication Skills**

Code: 202620 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Providing and explaining to students about basic concepts of communication; skills, styles and elements to build up communication skills.

### **18. Technical drawing applications**

Code: 205820

Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

This course provides the basics of projection; method of representing geometric space by projections on projection planes and how to solve basic geometry problems on its projections; study the basic transformations in the orthogonal projection method as a basis for the establishment of technical drawings.

### **19. Fundamentals of Electrical Engineering**

Code: 207109

Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The main content of this course is to provide the basic knowledge of electrical circuits, electrical machines and their applications in electrical and mechanical equipment, as well as in the technological processes of factories, enterprises, and systems related to the field of engineering. Additionally, the general knowledge about electrical experiment practice to determine the working parameters and characteristics of electrical machines, as well as the technical knowledge about assembly, operation, and repair of electric machines are introduced in this course. Knowing, understanding, and performing experiments are to determine working parameters and characteristics of DC and AC transformers and motors in the industry. The skills of inspection, operation, repair, and assembly are formed. This course also provides knowledge of electrical safety in factories.

### **20. Descriptive Geometry**

Code: 205810

Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

This course provides students with the most general knowledge about applied geometry. The course also builds students' thinking capacity about the system of projections in technical drawings. Thereby helping students interpret and understand industry technical drawings and can develop technical drawings in furniture design.

## **B. FUNDAMENTAL SPECIALIZED COURSES**

### **21. Wood science**

Code: 205540

Credit: 4

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Providing the knowledge of anatomical characteristics of wood; Methods of observation the wood structure; The chemical properties of wood and the determination of the wood chemical compositions; The physical properties of wood and the determination of moisture content, hygroscopicity, water absorption, shrinkage and swelling ratio, density... The mechanical properties of wood and the determination of parallel compressive strength, transversal compressive strength, static bending...; The wood defects and remedies; The relationship between structure and properties of wood; The classification of wood, identification and orientation of wood use according to wood properties.

## **22. Sawing Technology**

Code: 205541                      Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The Sawmill Technology module provides the technological process of sawing wood, mapping sawing, calculating the rate of timber utilization, sawing methods... Features and functions of some main equipment and auxiliary equipment in the sawmill workshop. Analysis and selection of suitable technology lines. Build a sawing map in accordance with product requirements and features and functions of each type of equipment

## **23. Lumber drying technology**

Code: 205543                      Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course "Lumber drying technology" equips learners with basic knowledge about principles of drying methods and operation; the effect of raw materials and drying environmental factors on the wood drying process; the sequence of steps to check dried material; how to operate equipment and how to control drying environmental factors. In addition, this subject also provides applied exercises to calculate drying environmental parameters and how to design a drying workshop in reality to serve the production process. Thereby, learners will gain basic knowledge related to wood drying and the design of wood drying kilns.

## **24. Wood Adhesive**

Code: 205544                      Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides students with knowledge of the basic gluing rules between glue and wood, gluing rules, glue classification, introduction of glues used in the wood industry, the factors that affect the quality of the joint, the method of processing and restoring the joint using glue. This course guides students with skills to set up the process of preparing wood glue and how to preserve wood glue after preparation

## **25. Principle of cutting wood**

Code: 205609                      Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides students with theoretical knowledge of wood cutting tools, concepts of cutting tools and types of wood cutting, the forces by the cutting tool on wood, sawdust formation, the factors affecting the wood cutting process. Students are provided with skills in calculating the wood cutting schedule, setting up wood cutting process diagram, calculating the wood cutting machine capacity at the factory, operating the wood cutting process, and assessing the quality of wood products after cutting

## **26. Ergonomics in Interior Design**

Code: 205801                      Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The module "Ergonomics in Interior Design" presents basic knowledge about Ergonomics application, roles of Ergonomics and related science, human physiological system, research

methods Ergonomics, people and environment, Ergonomics and design Interior space, Ergonomics and furniture design, Ergonomics and home safety.

### **27. Autocad application**

Code: 205815 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course introduces the basic knowledge of CAD technology in general and the applicability of CAD systems in the production preparation process for the Forest Product Processing industry in particular. In addition, the module also guides learners on how to apply and implement the functions of the Autocad software system in the process of product design and completion of drawings, in order to meet the needs of deploying production in reality.

### **28. Wood Preservation Technology**

Code: 205562 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course "Wood Preservation Technology" provides students with knowledge related to wood preservation treatment: The principles of the process of wood/bamboo preservation; Wood degradation factors; The methods of treating and preserving wood without using chemicals; Treating and preserving wood with chemical methods, including chemical preservatives and wood applying methods; Wood modification methods. This course also introduces the certifications and methods for evaluating the effectiveness of wood preservation treatments.

### **29. Fundamental specialized Internship**

Code: 205988 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course "Internship 1" equips students with the opportunity to approach and learn practically at some wood processing factories as well as the opportunity to self-study and practice more working styles and behavior in relationships. Through this internship, students also have the opportunity to review and better understand the basic knowledge of their specialization which they have learned, from the stage of round timbers to sawing stage and wood treatment stage. At the same time, this subject also helps students know the situation today of raw materials, machinery, production processes and products being produced at sawmills, drying workshops and wood treatment workshops.

### **30. Optimization in wood processing**

Code: 205546 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The optimization module provides methods of classifying optimization problems, applying optimization problems to solve practical problems in production and business activities of wood processing companies. The optimization problem is the problem of finding extremes (maximum or minimum) of a function that has constraints on variables to find optimal plan to improve the efficiency of a production process or economic activity

### **31. Kinematics and Kinetics of Mechanism**

Code: 207141 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no



machines, G, M instruction sets of CNC machines with manual programming method or automatic programming method. In addition, students are equipped with skills in writing turning and machining simulation programs on softwares: CIMCO, ssCNC, ArtCam, JdPaint; program writing and actual machining on CNC lathes FLC-20L and CNC milling MVC-955.

### **C. SPECIALIZED COURSES**

#### **37. Enterprise Management**

Code: 205778                      Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides learners with an overview of business management, specifically basic knowledge of materials management, marketing management, human resource management, capital management, price and production costs management. On this basis, students have the basic knowledge to be able to take on leadership positions in enterprises or sales and marketing, production and human resources departments.

#### **38. Structural Elements and Furniture Joints**

Code: 205822                      Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The wood structures module provides a method for calculating the strength of wood product structures. Select the appropriate wood structures for the use requirements of the building such as: guaranteed durability, aesthetics, easy to process, disassemble and save materials.

#### **39. Wood products Design**

Code: 205823                      Credit: 4

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The interior product design module provides the basic knowledge of wood product design, basic knowledge of structure; construction method, machining chart, technology sheet. Methodologies for product design help students orient their studies, research and professional development

#### **40. Wood-based board Technology**

Code: 205545                      Credit: 4

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course "Wood Based Board Technology" provides students with knowledge about wood based board types and manufacturing technologies: Lamination wood boards and Glulam; Veneers and Plywood; Particle boards made from wood and agricultural residues; Fiberboards made from wood and non-wood fiber. This course also introduces the certifications and methods for evaluating the quality of wood based boards, the methods for determining the formaldehyde emission and the solutions to reduce the formaldehyde emission in wood based boards.

#### **41. Finishing Technology**

Code: 205548                      Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course focuses on the concepts and characteristics of materials used in coating wood

surfaces and wood based boards, theories on surface coating methods, coating technology methods on wood surfaces, the method of coating wood based boards with veneers, the principle of operating the equipment, spraying techniques and checking the quality of the wood surface

#### **42. Furniture Processing Technology**

Code: 205563 Credit: 4

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides for students with general knowledge about materials in furniture production, industrial fine arts, design principles, production of wooden products, theory of furniture production technology, methods of designing and manufacturing wood products, wood product assembly techniques, bending technology, calculating wood materials, wood product costs, methods of economical using materials, designing and processing manufacture products, designing production lines, planning and organizing furniture production

#### **43. Woodworking machinery**

Code: 205612 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course “Woodworking machinery ” provides students with knowledge of the structure and operating principles of machinery and equipment used in the wood industry such as those in sawmills, furniture and board factories, and etc. In addition, the course also provides students with technical skills to operate, install, use, and maintain machinery and equipment to ensure occupational safety.

#### **44. Specialized English**

Code: 205561 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides for students with an overview of English terms about woodworking technology such as: wood science, principles of cutting wood, wood drying, wood preservation, furniture manufacturing technology, technology for manufacturing wood based boards and pulp, design and construction of wood working, drawing standards, wood names in English and accessories for the wood industry. Through this course students also provides with skills such as: write reports and presentations by English, look up specialized journals, scientific articles on wood and communicate with researchers, partners and foreign experts in the wood processing industry

#### **45. Labor safe and industrial environment protection**

Code: 205616 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course “Labor safety and industrial environment protection” equips learners with basic knowledge of some articles prescribed by the Law on labor safety and hygiene, techniques for safety and fire prevention in production. From this knowledge, learners can identify factors affecting working conditions and how to improve adverse working conditions to increase economic efficiency and safety for the production process.

#### **46. Product quality management**

Code: 205709 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course “Product quality management” equips learners with general knowledge of quality and product quality management, including concepts of product, quality and quality management; tools for quality management; methods of quality management as well as quality management standards. From this acquired knowledge, learners can apply it to identify, evaluate and give solutions to quality problems at the factories, consequently, helping the factories to improve operational efficiency in management, production and business.

#### **47. Specialized Internship**

Code: 205989 Credit: 3

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides students with practical knowledge in processing technology for wood products, wood product design, wood product manufacturing process, wood based board manufacturing technology, and operating machinery, setting the plan and schedule in the production of wood products at the factory. In addition, students are also provided with the skills to read drawings, evaluate product quality, design and plan the production process of wood products.

#### **48. Forest product chemistry**

Code: 205513 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides for students with knowledge about the basic principles of the types of forest materials to be extracted, extraction methods, extraction processes such as extraction of essential oils, resins, tannins, waxes, pigments etc. and wood pyrolysis process. This course also teaches students how to perform the extraction process and how to preserve essential oils, tannins, and resins after extraction in laboratories and factories.

#### **49. Basic decoration**

Code: 205809 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course is built to provide students with basic knowledge about colors, decorative motifs, arranging the layout of a basic decoration, etc. to apply them to product design, interior decoration design, etc. raise awareness of the arts.

#### **50. Non-Timber Forest Products**

Code: 205407 Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Non-timber forest products are products of biological or biological origin (excluding timber and forest trees for timber purposes) found in forests and forest land and having direct value for human use. This course will provide basic knowledge about non-timber forest products for students to be able to investigate, to identify, to analyze the status of non-timber forest products exploitation, utilization in order to contribute to the non-timber forest products development plans and strategies at different levels. Students will obtain the knowledge and skills of this course through theoretical lectures and class assignments

and thematic.

**51. Layout design for wood processing factory**

Code: 205557

Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course “Plant layout design in wood processing technology” equips learners with basic knowledge of layout design for wood processing factory, including general principles that need to be ensured when planning for survey - design, pre-design and post-design works; technological design; calculating the required energy for the needs; and principles of workshop design. Thereby, learners can know the sequence of steps to design, calculate and build a synthetic wood processing factory.

**52. Perspective Drawing**

Code: 205808

Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course is built to provide students with knowledge, principles of perspective drawing, symbols and requirements on technical drawings. Draw a preliminary sketch of an interior viewport with the correct proportions and dimensions by hand-drawing methods and the application of auxiliary software such as Autocad, 3Dsmax, Sketch up... perfecting ideas and reinforcing thinking in design .

**53. Pulp Manufacture**

Code: 205774

Credit: 4

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

Providing the knowledge of wood processing for pulp manufacture; All main methods for pulping technology; The equipments are used in pulping lines; Introduction and determination of some important pulp properties. In addition, the course also introduces some actual pulping production lines in Vietnam.

**54. Exterior design**

Code: 205814

Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The course provides students with a method of thinking to find ideas, steps to design an actual exterior project such as survey and assessment of the current situation; outline ideas; overall ground design, subdivisions design, miniatures, trees... In addition, the course also trains students in the skills of expressing technical drawings for exterior construction.

**55. Quantity surveying for interior projects**

Code: 205824

Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

Summary of course content:

The interior project estimating module provides the basic principles of estimating, cost estimation forms and a system of legal documents guiding the preparation of estimates on the method of calculating unit prices, norms, making estimates. An estimate is a document estimating the total amount of funds needed for the completion of a work or project

**56. Startup in Forestry**

Code: 205566

Credit: 2

Study conditions: prerequisite / pre-study / parallel:  yes  no

