
IT 2305 MACHINE WOOD TECHNOLOGY
SYLLABUS SPRING 2020

Instructor: Mr. Jim Low
Class time: MW 2:00 pm - 3:50pm

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Office Hours: By Appointment

STUDENTS WITH SPECIAL NEEDS

Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the Student's responsibility to initiate a request. Please contact me, Ms. Rebecca Greathouse Wren, M.Ed., LPC-S, Director/Counselor, Accessibility Services Coordinator, Ferguson Hall (Suite 112) at 432.837.8203; mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas 79832. Students should then contact the instructor as soon as possible to initiate the recommended accommodations.

COURSE DESCRIPTION

This course of study is designed to provide the student with an opportunity to explore the processes and materials utilized in industrial woods. The course is a beginning-to-intermediate level course designed to introduce the student to the hand and machine tools associated with wood production, as well as wood characteristics. At the end of this course students will understand several production processes associated with woodworking. Students will be able to select the proper process order, machines and tools, joinery, fasteners, and finishes. They will gain an understanding of the knowledge requirements, equipment requirements, physical requirements, safety requirements, and special skill requirements in the various processes of the woods industry through research, lecture, reading, and practical laboratory exercises. Working in the lab with several different types of wood and how the material is affected by the tools will help the student develop some of the special skills required in woods industries. Topics will include (though not necessarily in this order):

CUTTING CURVES AND IRREGULAR SHAPES, DRILLING AND BORING, FASTENERS, FINISHING, GLUING, LAYOUT, MEASURING, PLAN OF PROCEDURE, PLANING AND SAWING, ROUGHING OUT, SHOP SAFETY, TURNING, WOOD CHARACTERISTICS, WOOD IDENTIFICATION, WORKING DRAWINGS AND PLANS

ATTENDANCE

Attendance is necessary! Six absences (on a TR schedule) is considered excessive. Attendance will be taken each scheduled class period in accordance with University and Departmental Policy. Attendance will count as part of the daily work grade. Everyone starts with 250 points at the beginning of the semester for attendance - each absence (regardless of the reason) will cost 10 of those points. After six absences the instructor may drop a student from the course with a grade of 'F', in accordance with the Student Handbook. Because much of the learning in this course takes place in the form of laboratory activities, attendance in the lab will also be considered in the final grade. Attendance will be taken at the beginning of each class period and once taken will not be changed. If you are tardy and miss the roll call you will be charged with one absence.

CELL PHONES

Cell phones are not permitted in the classrooms or labs. Leave them in your car or put them in your locker.

CLASS STRUCTURE

This course is designed to be a guided study and not just dissemination of information. It will be run primarily on a lecture\discussion\lab format. Lectures will utilize power points, overheads, demonstrations, videos, and visits to the internet. The lectures will be given primarily to enhance and answer questions about the *material that should have been studied prior to the class period*. There may be some step-by-step guided practice, one-on-one assistance, demonstration, and possibly films during the scheduled class time in areas where there seems to be a need. Lectures and demonstrations will not be conducted on an individual basis because of missed classes. It is essential that you are in attendance for the scheduled meetings so you get your questions answered and do not miss the shared information, demonstrations, and process descriptions. Several of the scheduled class times will be scheduled as lab time as well.

ASSIGNMENTS

Daily work will consist of reading, worksheet pages, woodworking projects, record sheets, and equipment proficiency demonstrations. Much of the daily work will be completed in preparation for classroom discussions and tests. There will be several laboratory woodworking assignments required for this course. Some of the laboratory exercises and projects will be completed together during the scheduled class time. Several of the lab assignments will require written reports, sketches, and drawings pertaining to the processes being utilized. Instructions regarding the format of the written material will be distributed closer to the time of assignment. It is essential that everyone be in attendance for the scheduled meetings because that is where the demonstrations, explanation, and assignments will be given. Some meeting days will also be used as time to work together on laboratory assignments.



Due dates

All assignments and projects will be given due dates which **must** be met. All assignments will be due by 5:00 pm on the assigned day. Assignments and projects will be docked ten points for each calendar day they are late. Work will be accepted after the fourth late day so the records show it was completed, but no grade will be given. You will be responsible for meeting the deadlines whether you miss class or not.



Grading

All daily work and laboratory projects will be graded on either a point per answer basis or a percentage basis with specific criteria given at the time of the assignment during class. All worksheets or workbook assignments will be graded with the use of an answer key on a points per answer basis. Any other papers assigned will be graded on a percentage basis which will include content, presentation, style, grammar, and format. Projects in the lab will be graded on accuracy, neatness, content, adherence to standards, safety procedures followed, teamwork (if applicable), and workmanship which will be broken into specific categories described on grade sheets given at the time of the assignments. All grades are converted to a percentage in the grade book. That percentage will be tallied in the computer grade book resulting in a final percentage for each of the graded areas of the course. The written portion of any assignment will be graded on a 100-point percentage basis when turned in for the final time. Remember, the daily work will be the bulk of the final grade. Students will be responsible for meeting all deadlines whether in attendance or not.



GRADES

Final grades will be determined on a point basis in the following manner:

- 10% quizzes and tests
- 10% final exam (comprehensive)
- 60% laboratory assignments and any daily work including attendance.
 - 70% projects
 - 5% Hand Project
 - 10% Shelf with Appliqué
 - 10% Glued Box with Corner Joints and Lid
 - 10% Band-saw Box
 - 10% Turning Project (Between Centers)
 - 10% Turning Project (Face Plate)
 - 30% Student Choice Project
 - 10% Finishing Project
 - 5% Biscuit Project (picture frame)
 - 10% other paper work, reports, and sketches
 - 20% attendance
- 10% instructors discretion, work attitude, shop and tool care

In the event that one of the above categories is not completed during the course, that percentage applied to it will be evenly distributed among the grades at that level.

A=100-90; B=89-80; C=79-70; D=69-60; F= 59-0

Final grades will include the following criteria:

- A) **All assignments** must be completed with an average of 90% or better to receive a grade of 'A' in this course.
 - B) **All assignments** must be completed with an average of 80% to 89% to receive a grade of 'B' in this course.
- (If any work is left undone a grade of 'C' will be the highest possible grade awarded regardless of grades received on individual work assignments turned in.)
- C) **Regardless of amount of work submitted**, a grade of 'C' will be given with a final percentage of 70% - 79%
 - D) **Regardless of amount of work submitted**, a grade of 'D' will be given with a final percentage of 60% - 69%
 - F) **Regardless of amount of work submitted**, a grade of 'F' will be given with a final percentage below 60%

There will be **NO INCOMPLETES** given at the end of this semester.

READING

The text is required for this course:

Modern Woodworking by Wagner and Kicklighter. Published by The Goodheart- Wilcox Company, Inc. (2000)

There will also be some reading material in the form of handouts that contain additional information. You will be responsible for that information at test and quiz time.

LAB TIME

There **WILL** be a substantial amount of lab work to be done in this course. Much of what you learn and retain will come from the practical lab work you complete. Normal expectations are at least 6 hours outside of scheduled class time each week for reading, studying, and working on your projects in the lab. You will be able to do some of your lab work within the scheduled class time and you will be given some release time for the lab work. However, there will not be enough time during the scheduled class period for completing all the labs necessary. For any extra time needed, the lab will be scheduled to fit your needs as much as possible. The lab will be open for your use during open building hours (8 - 5 daily). The lab may be open some evenings as well when the lab assistant schedules are complete. Those working during the evenings will be required to leave when the lab assistant leaves. No one will be left in the building without a lab assistant. Be advised that there may not be a knowledgeable lab assistant available at all times. No weekend hours are planned at this time.

It will be up to you to schedule time on your own within the framework of the building hours.



EQUIPMENT and SUPPLIES

Most of the equipment you will need for this course and the lab work will be supplied through the department. However, there is not enough equipment for everyone to use at the same time so we may have to work in groups. The equipment will have to be shared. The school equipment will **NOT** be allowed out of the lab, which means all students must find time to be in the lab.

Items you will be required to purchase for the lab include:

Safety glasses or goggles (some safety glasses may be purchased through the department)

Gloves (if desired)

Lab coat or apron (if desired)

Any other special tools you wish to use that we do not have in the lab

NOTE: Safety glasses **are required** any time you are working in the lab.

Supplies: Students will be responsible for purchasing the supplies they will use in this course. There will be a materials fee that will cover the wood that you use for your assigned projects. In addition to the assigned projects, you will be responsible for the materials for the last project (your choice project) you complete because everyone will be doing something different.

Lumber not included in your materials fee may be purchased from our rack (if we have what you need) or from another source if you have one. If purchased from our stock, you must have a receipt showing payment prior to pulling and working on the material.

Other materials - Sand paper, steel wool, stain, clear finish, wax, dust masks, lab coats or aprons, brushes or other finish applicators, fasteners, hinges, handles, etc. are the student's responsibility.



Materials Fee - The materials fee will cover lumber cost for all but the student choice project. It is set at \$35.00 for the Spring 2013 based on the average usage and cost of lumber. The fee may be paid to the departmental secretary or at the cashiers' office. You will be required to obtain the account number before you pay your fee at the cashier's office. If you pay at the cashier's office you will be required to show the receipt to the instructor prior to beginning any lab work.

STORAGE

The lockers in the hallway may be checked out and used for storing your equipment and supplies. These lockers must be signed out with the secretary in the IT main office. You must sign out the locker with your name and a phone number. You must supply your own lock. You may be able to keep your larger projects in the loft in the lab. However, the loft cannot be locked so the honor system is in full effect in the lab. Be sure you mark your materials well if leaving them in the loft area. **DO NOT LEAVE PROJECTS, OR DRAWINGS, OR EQUIPMENT OUT ON THE TABLES IN THE LAB. YOU WILL LOSE THEM!**

QUIZZES

You will not be given notice for quizzes. They will be primarily written in nature and all material will be fair game. There will be no make-up quizzes.

TESTS

Everything we discuss and everything assigned as exercises or as reading is fair game for tests and quizzes. You will be given notice for all unit tests. They will be primarily written in nature, but will include process question, identification, and calculations. You must be in attendance for the tests! *Makeup tests will not be given.*

MIDTERM EXAM

No midterm exam is scheduled for this semester

FINAL EXAM

The final exam is scheduled for (TBD). It will be written and comprehensive of the entire semester. It will also be a combination of various style questions similar to the unit tests. The exam will only be given on the day it is scheduled so **DO NOT** make any other plans for that time.



FINAL WOOD PROJECT



Everyone will be required to select a moderately difficult project as a final project. This will be an individual project. This project may be of your own design or selected from plans available in books, magazines, internet, or other sources you may find. You should start this project sometime during the 10th week of class giving you about one month to complete it. There will be a more complete description of the project and grading requirements when we get closer to the starting date about mid-term.

NOTE: The materials for this project are not included in your material fee.

IT 2305
Machine Wood Technology
OBJECTIVES

This course of study is designed to provide the student with an opportunity to explore the processes and materials utilized in industrial woods. The course is a beginning-to-intermediate level course designed to introduce the student to the hand and machine tools associated with wood production. Students will be introduced to several production processes, joinery, fasteners, and finishes. Emphasis is placed on developing an understanding of the knowledge requirements, equipment requirements, physical requirements, safety requirements, and special skill requirements in the various processes of the woods industry.

Upon completion of this course the student will be able to:

- Describe in writing, the safety rules associated with the hand tools, hand held power tools, milling and turning machines, and materials used in the woods industry.
- Recognize and name hand tools relating to wood processing.
- Discuss and demonstrate the correct care of hand tools relating to wood processing.
- Describe the most commonly used hardwoods.
- Identify selected hardwoods by their appearance and weight.
- Select correct tools for a particular process and use it safely.
- Use measuring tools to correctly layout design on wood in preparation for tooling.
- Recognize and name hand held and floor model power equipment relating to wood processing.
- Discuss and demonstrate the correct care of power tools relating to wood processing.
- Demonstrate the safe operation of power tools relating to wood processing.
- Discuss safety equipment related to power tools used in wood processing.
- Prepare a piece of rough lumber for lay-out and completion of a project.
- Describe in writing and physically construct several basic joints in wood construction.
- Describe the most common wood finishes and how they would be applied.
- Select appropriate finishes for projects completed and apply them safely and correctly.
- Evaluate a project and develop a plan of procedure for its completion.
- Calculate an amount of lumber using board-foot measures.
- Correctly lay-out and make rough cuts for an assigned project.
- Evaluate a project and assess its quality.

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Tentative Reading Schedule

Spring 2020

The following is a tentative reading schedule for the semester. The dates provided are the dates the reading is assigned and the reading is to be completed by the following class day.

Thursday	January 17 (1)	Chapter 3: Woodshop Safety
Thursday	January 29 (3)	Chapter 1: Planning and Designing in Woodworking Chapter 2: Selecting and Identifying Materials Chapter 35: Wood Technology
Tuesday	February 5 (6)	Chapter 4: Measurement, Layout, and Rough-Out Chapter 5: Planing and Sawing Safety Chapter 6: Drilling and Boring Chapter 8: Cutting Curves, Irregular Shapes, Bevels, and Chamfers Chapter 33: Tool Selection and Care
Tuesday	February 14 (9)	Chapter 13: Planing Machines Chapter 14: Circular Saws Chapter 15: Band Saw, Scroll Saw, and Saber Saw
Thursday	February 21 (11)	Chapter 7: Wood Joints Chapter 9: Adhesives, Gluing, and Clamping Chapter 10: Mechanical Fasteners and Assembly
Thursday	March 7 (15)	Chapter 11: Sanding and Preparing for Finish Chapter 12: Finishes and Finishing
Thursday	March 21 (17)	Chapter 16: Drill Press, Mortiser, and Tenoner Chapter 17: Lathe Chapter 18: Router, Shaper, Molder Chapter 19: Sanding Machines
Thursday	April 18 (25)	Chapter 34: Mass Production Chapter 36: Career Opportunities

Total number of class days (43) or (28)

IT 2305 Machine Technology

Tentative Test Schedule

Spring 2020

Date tests will be given and text chapters included (lecture material prior to the test will also be included)

Test 1	Tuesday	January 29 (4)	Chapter 3: Woodshop Safety
Test 2	Thursday	February 7 (7)	Chapter 1: Planning and Designing in Woodworking Chapter 2: Selecting and Identifying Materials Chapter 35: Wood Technology
Test 3	Thursday	February 21 (11)	Chapter 4: Measurement, Layout, and Rough-Out Chapter 5: Planing and Sawing Safety Chapter 6: Drilling and Boring Chapter 8: Cutting Curves, Irregular Shapes, Bevels, and Chamfers Chapter 33: Tool Selection and Care
Test 4	Thursday	February 28 (13)	Chapter 13: Planing Machines Chapter 14: Circular Saws Chapter 15: Band Saw, Scroll Saw, and Saber Saw
Test 5	Tuesday	March 19 (16)	Chapter 7: Wood Joints Chapter 9: Adhesives, Gluing, and Clamping Chapter 10: Mechanical Fasteners and Assembly
Test 6	Tuesday	April 2 (20)	Chapter 11: Sanding and Preparing for Finish Chapter 12: Finishes and Finishing
Test 7	Tuesday	April 16 (24)	Chapter 16: Drill Press, Mortiser, and Tenoner Chapter 17: Lathe Chapter 18: Router, Shaper, Molder Chapter 19: Sanding Machines
Test 8	Tuesday	April 30 (28)	Chapter 34: Mass Production Chapter 36: Career Opportunities

FINAL EXAM TBD COMPREHENSIVE