



Syllabus for AT-30 Automatic Trans/Transaxle

Course Information

Semester & Year: Spring 2024

Course ID & Section #: AT-30-E6478

Instructor's name: Ernest Shull

Day/Time of required meetings: Tuesday & Thursday 8:15 AM to 12:35 AM

Location: AT-128

Course units: 4

Instructor Contact Information

Office location AT-129A

Office hours: Monday & Wednesday 1:00PM to 2:00PM

Phone number: 707-476-4221

Email address: Ernest-Shull@redwoods.edu

Catalog Description

A course covering theory and principles related to both hydraulic and electronically actuated automatic transmissions/transaxles. Topics will include positive and variable displacement pumps, torque converters, torque converter clutches, hydraulic valves, electronic shift solenoids, governors, and common compound planetary gear arrangements. The laboratory portion of the course will focus on diagnostic and overhaul procedures, in-vehicle testing, and bench testing of various components. The course is designed in conjunction with Automotive Service Excellence (ASE) standards and subsequently will prepare the student for the ASE Automatic Transmission Certification Examination.

Text and References

Automotive Automatic Transmissions and Transaxles: CDX Master Automotive Technician Series
Edition: 2018

Author: Santini, Keith / VanGelder, Kirk

ISBN-13: 978-1-284-12203-9

ISBN-10: 1-284-12203-4

Other requirement: Safety Glasses

Course Student Learning Outcomes

1. Perform maintenance and adjustments on transmissions and transaxles.
2. Diagnose and repair in-vehicle transmission and transaxle problems.
3. Diagnose and repair off-vehicle transmission and transaxle problems.

Educational Accessibility & Support

College of the Redwoods is committed to providing reasonable accommodations for qualified students who could benefit from additional educational support and services. You may qualify if you have a physical, mental, sensory, or intellectual condition which causes you to struggle academically, including but not limited to:

- Mental health conditions such as depression, anxiety, PTSD, bipolar disorder, and ADHD
- Common ailments such as arthritis, asthma, diabetes, autoimmune disorders, and diseases

- Temporary impairments such as a broken bone, recovery from significant surgery, or a pregnancy-related disability
- A learning disability (e.g., dyslexia, reading comprehension), intellectual disability, autism, or acquired brain injury
- Vision, hearing, or mobility challenges

Available services include extended test time, quiet testing environments, tutoring, counseling and advising, alternate formats of materials (e.g., audio books, E-texts), assistive technology, on-campus transportation, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact [Disability Services and Programs for Students \(DSPS\)](#). If you are unsure whether you qualify, please contact DSPS for a consultation: dsp@redwoods.edu.

- Eureka: 707-476-4280, Student Services Building, 1st floor
- Del Norte: 707-465-2324, Main Building, near the library
- Klamath-Trinity: 707-476-4280

Student Support Services

Good information and clear communication about your needs will help you be successful. Please let your instructor know about any specific challenges or technology limitations that might affect your participation in class. College of the Redwoods wants every student to be successful.

The following online resources are available to support your success as a student:

- [CR-Online](#) (Comprehensive information for online students)
- [Library Articles & Databases](#)
- [Canvas help and tutorials](#)
- [Online Student Handbook](#)
- [Online Tutoring Resources](#)

To learn more about the resources available to you, click on a title bar below, or click the down arrow to expand them all.

Klamath-Trinity students can contact the CR KT Office for specific information about student support services at 530-625-4821

Community College Student Health and Wellness

If you are in distress or are with someone at risk right now, call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255) or TEXT 741-741

Timely Care

When you're feeling under the weather physically or distressed mentally, you can find the help you're looking for in just a few quick taps. Students can schedule an appointment anytime via phone, video, and chat. [Visit TimelyCARE here](#)

Mental Health Counseling

Students should text, email, or fax Shawna Bell directly for scheduling and/or services.

Contact info

Text: 707-496-2856

Email: shawnabmft@gmail.com

Fax: 707-237-2318 (voicemail can be left via fax)

Wellness Central

Resources, tools, and trainings regarding health, mental health, wellness, basic needs and more designed for California community college students, faculty and staff are available on the California Community Colleges [Wellness Central](#).

Counseling

[Counseling & Advising](#) can assist students in need of academic advising and professional counseling services. Visit the Welcome Center in the lower level of the student services building Monday –Friday 9am – 4pm (during the semester, summer hours may vary).

Basic Needs Center

[The Basic Needs Center](#) provides for the health and safety of students by providing access to healthy food, financial resources, and referrals to safe and secure housing. Students can submit a request for services and information [here](#).

Contact info

Phone: 707-476-4153

Email: the-grove@redwoods.edu

Learning Resource Center

Learning Resource Center includes the following resources for students

- [Library Services](#) to promote information literacy and provide organized information resources.
- [Multicultural & Diversity Center](#)
- [Academic Support Center](#) – offers tutoring and test proctoring for CR students.
- [Student Tech Help](#) – provides students with assistance around a variety of tech problems.

EOPS

[Extended Opportunity Programs & Services \(EOPS\)](#)[Links to an external site.](#) provides services to eligible income disadvantaged students including: textbook awards, grants, career academic and personal counseling, transportation assistance, tutoring, laptop, calculator and textbook loans, priority registration, graduation cap and gown, workshops, and more!

TRiO Student Success Program

The TRiO Student Support Services Program provides eligible students with a variety of services including academic advising, career assessments, assistance with transfer, and peer mentoring. Students can apply for the program in [Eureka](#) or in [Del Norte](#).

Veterans Resource Center

The [Veteran's Resource Center](#) supports and facilitates academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources.

CalWORKS

CalWORKs – California Work Opportunity & Responsibility to Kids (CalWORKs). Provides supportive services to student parents with children under the age of 18, who are receiving cash assistance (TANF **benefits**), to become self-sufficient. Services include: transportation assistance, basic student supplies, tutoring, priority registration, laptop and calculator loans, career, academic, and personal counseling, and more!

Course Attendance Policy

Attendance will be taken at the start of each class session. **Students who accumulate 4 absences during the first 10 weeks of class will be dropped from this class by the instructor, no exceptions.**

Punctuality is essential in the workplace and is considered respectful of fellow students and instructors. Excessive tardiness can affect your score as well. Less time present means you have less time to complete tasks.

Students who have experienced extenuating circumstances can complete & submit the **Excused Withdrawal Petition** to request an Excused Withdrawal (EW) grade instead of the current Withdrawal (W) or non-passing (D, F & NP) grades. The EW Petition is available from the Admissions and Records Forms Webpage. Supporting documentation is required.

Evaluation & Grading Policy

Course Evaluation

Course Points

All Labs will contribute 50% towards your final grade. Labs are graded at 20 points per lab. 10 Points towards participation and 10 points towards Repair Orders.

Tests and Homework will contribute towards the other 50% with 10% towards Homework and 40% toward Tests

Chapter Quiz Assignment

Homework will include completing the chapter quizzes for that day as a group in class. This can be made up if a class day is missed.

Extra Credit - Each student may elect independently to read and report on a topic related to automatic transmissions/transaxles from a source other than the course text i.e. recognized trade publications, library reference material, magazines, newspaper articles, etc... The report must be no less than one page typed and no longer than three pages typed. You must properly cite your references on a separate page. You may earn up to 50 points per report and you may turn in a maximum of 1 report per semester. Please inform the instructor of your topic prior to doing this assignment.

Spring 2024 Dates

January 12	Last day to register for classes (day before the first class meeting)
January 13	Classes begin
January 15	Martin Luther King, Jr.'s Birthday Holiday (District-wide closure)
January 19	Last day to add a class
January 26	Last day to drop without a "W" and receive a refund
January 29	Census Date (20% of class)
February 16	Lincoln's Birthday Holiday (District-wide closure)

February 19	President's Day Holiday (District-wide closure)
March 7	Last day to petition to graduate
March 29	Last day for student initiated withdrawal (62.5% of class)
March 29	Last day for faculty initiated withdrawal (62.5% of class)
March 11-16	Spring break (no classes)
May 4-10	Final Examinations
May 10	Last day to file for P/NP Option
May 10	Semester Ends
May 17	Grades due
May 24	Grades available

Academic dishonesty

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct ([AP 5500](#)) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [College Catalog](#) and on the [College of the Redwoods website](#).

AI Use Class Policy

[There is no official CR policy on AI use. It is up to the instructor how they would like to address AI use in their courses. Below are three sample policies for you to consider, adapt, or delete.]

Recent advancements in generative artificial intelligence (AI) have made large language models such as ChatGPT and Google's Bard widely available. However, overuse of these tools in this class can undermine your learning and curtail the development of your critical and creative thinking skills. In addition, AI outputs are often unreliable and frequently subject to bias. For these reasons, the policy of this class is that AI cannot be used at any point in the completion of class assignments, including discussion posts. Any or all of your assignment submissions and discussion posts may be screened by AI detection software, but the real penalty for AI misuse is that you will miss out on an opportunity to learn.

Recent advancements in generative artificial intelligence (AI) have made large language models such as ChatGPT and Google's Bard widely available. Sometimes, using these tools appropriately can help us overcome barriers and allow us to focus on deeper learning. However, overuse of these tools can undermine the development of our critical and creative thinking skills. In addition, AI outputs are often

unreliable and frequently subject to bias. For these reasons, it is sometimes appropriate and sometimes inappropriate to use generative AI in the completion of assignments or in discussion posts. For this class, please see the specific assignment instructions for guidance on how and when generative AI tools may be used appropriately as we're working on and learning from a particular assignment. Also, please keep in mind that you are responsible for anything you submit; please carefully review all AI-generated outputs, screening them for accuracy, bias, appropriateness, and fidelity to your perspective.

Generative AI tools, such as ChatGPT and Google's Bard, are likely to be widely used in the workplace moving forward. It's important for you to understand how to use them ethically and effectively. For that reason, in this class, you will sometimes be invited to use such a tool in the completion of an assignment. In this class, using generative AI tools is not cheating if the outputs are screened by you for accuracy, bias, appropriateness, and fidelity to your perspective.

Disruptive behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process, a disruptive student may be temporarily removed from class. In addition, the student may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct ([AP 5500](#)) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the [College Catalog](#) and on the [College of the Redwoods website](#).

Inclusive Language in the Classroom

College of the Redwoods aspires to create a learning environment in which all people feel comfortable in contributing their perspectives to classroom discussions. It therefore encourages instructors and students to use language that is inclusive and respectful.

Canvas Information

Log into Canvas at [My CR Portal](#)

For help logging in to Canvas, visit [My CR Portal](#).

For help with Canvas once you're logged in, click on the Help icon on the left menu.

For tech help, email its@redwoods.edu or call 707-476-4160

Canvas online orientation workshop: [Canvas Student Orientation Course \(instructure.com\)](#)

Setting Your Preferred Name in Canvas

Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact [Admissions & Records](#) to request a change to your preferred first name and pronoun. Your Preferred Name will only be listed in Canvas. This does not change your legal name in our records. See the [Student Information Update form](#).

Emergency Procedures / Everbridge

College of the Redwoods has implemented an emergency alert system called Everbridge. In the event of an emergency on campus you will receive an alert through your personal email and/or phones. Registration is not necessary in order to receive emergency alerts. Check to make sure your contact information is up-to-date by logging into [WebAdvisor](#) and selecting 'Students' then 'Academic Profile' then 'Current Information Update.'

Please contact Public Safety at 707-476-4112 or security@redwoods.edu if you have any questions. For more information see the [Redwoods Public Safety](#).

In an emergency that requires an evacuation of the building anywhere in the District:

- Be aware of all marked exits from your area and building
- Once outside, move to the nearest evacuation point outside your building
- Keep streets and walkways clear for emergency vehicles and personnel

Do not leave campus, unless it has been deemed safe by the campus authorities.

Class schedule

<i>Date</i>	<i>Assigned Reading</i>	<i>Theory</i>	<i>Lab Assignment</i>
1/16	<i>Chapters 2 & 3</i>	<i>Shop Safety/Tools</i>	<i>Tour/Haz-Mat</i>
1/18	<i>Chapter 6</i>	<i>Automatic Trans Fundamentals</i>	<i>Transmission I.D.</i>
1/23	<i>Chapter 7</i>	<i>Transmission Components</i>	<i>Transmission Inspections</i>
1/25	<i>Chapter 8</i>	<i>Hydraulic Fundamentals</i>	<i>Transmission Pressure Tests</i>
1/30	<i>Chapter 9</i>	<i>Torque Converters</i>	<i>Filter Change/Flushes</i>
2/1	<i>Chapter 10/11</i>	<i>Electronic & Hydraulic Trans</i>	<i>Electrical Diagnostics</i>
2/6		Test 1	
2/8	<i>Chapter 13</i>	<i>Transmission Removal</i>	<i>R&R Transaxle</i>
2/13		<i>Lab Day</i>	<i>R&R Transaxle</i>
2/15	<i>Chapter 19</i>	<i>Transmission Reinstallation</i>	<i>R&R Transaxle</i>
2/20		<i>LAB DAY</i>	<i>R&R Transaxle</i>
2/22		<i>LAB DAY</i>	<i>R&R Transaxle</i>
2/27	<i>Chapter 12</i>	<i>In Vehicle Transmission Repairs</i>	<i>Seal Service</i>
2/29	<i>Chapter 20</i>	<i>Dual Clutch Transmissions</i>	<i>Power Flow Diagnostics</i>
3/5		<i>Scan Tool Usage</i>	<i>Scan Tools</i>
3/7	<i>Chapter 22</i>	<i>Hybrid Vehicles</i>	<i>Hybrids</i>
3/12	No Class	SPRING BREAK	
3/14	No Class	SPRING BREAK	
3/19		<i>Planetary Gear Sets</i>	<i>4L60E</i>
3/21	<i>Chapter 23</i>	<i>Ford Transmissions</i>	<i>4L60E</i>
3/26	<i>Chapter 23</i>	<i>Ford Transmissions</i>	<i>4L60E</i>
3/28		Test 2	
4/2	<i>Chapter 14</i>	<i>Transmission Disassembly</i>	<i>4T65E Teardown</i>
4/4	<i>Chapter 14</i>	<i>Transmission Disassembly</i>	<i>4T65E Teardown</i>
4/9	<i>Chapter 16</i>	<i>Gear Train Rebuilding</i>	<i>4T65E Gear Train</i>
4/11	<i>Chapter 15</i>	<i>Hydraulic System Rebuilding</i>	<i>4T65E Clutches</i>
4/16	<i>Chapter 17</i>	<i>Valve Body & Electric</i>	<i>4T65E Valve Body</i>
4/18		Test 3	
4/23	<i>Chapter 27</i>	<i>Ford 6R60</i>	<i>4T65E Valve Body</i>
4/25	<i>Chapter 24</i>	<i>4T65E Speed Rally</i>	<i>Identify Components</i>
4/30	<i>Chapter 25</i>	<i>4T65E Speed Rally</i>	<i>Identify Components</i>
5/2		Make Up Day	
5/9	FINAL EXAM	8:30 to 10:30	