

## Syllabus

### EE 3431 Digital Communications Lab Spring Semester 2024

<b><u>Instructor:</u></b>	Md Abu Zobair, <a href="mailto:mz3mg@mst.edu">mz3mg@mst.edu</a>
<b><u>Office</u></b>	G27, EECH
<b><u>Office hours</u></b>	By appointment, arrange by email or in class.
<b><u>Lab coordinator</u></b>	Dr. Robert Woodley, 115 EECH, <a href="mailto:rwoodley@mst.edu">rwoodley@mst.edu</a>
<b><u>Web pages relevant to this class</u></b>	

Lab Manual

<https://ece.mst.edu/resources/current-students/practice-exams-class-lab-notes/>

Safety Manual

[https://ece.mst.edu/media/academic/ece/documents/coursenotes/ee3101electronicsilab/EE\\_3101\\_Safety\\_Lab\\_Manual\\_For\\_ECE.pdf](https://ece.mst.edu/media/academic/ece/documents/coursenotes/ee3101electronicsilab/EE_3101_Safety_Lab_Manual_For_ECE.pdf)

Regulations Regarding Student Conduct

<http://registrar.mst.edu/academicregs/index.html>

[http://www.umssystem.edu/ums/rules/collected\\_rules/programs/ch200/200.010\\_standard\\_of\\_conduct](http://www.umssystem.edu/ums/rules/collected_rules/programs/ch200/200.010_standard_of_conduct)

<http://stuco.mst.edu/honor-code/>

<http://ugs.mst.edu>

<http://ugs.mst.edu/academicintegrity/studentresources-ai/>

<http://titleix.mst.edu>

Disability Support Services

<http://dss.mst.edu>

LEAD Learning Assistance

<http://lead.mst.edu>

Burns & McDonnell Student Success Center

<http://studentsuccess.mst.edu>

<http://www.facebook.com/SandTssc>

Floor Plan for All Buildings on Campus

<http://designconstruction.mst.edu/floorplan>

**Course Description** This laboratory is primarily concerned with linear system theory. Students will use equipment such as spectrum analyzers, oscilloscopes and computer-based tools to design and analyze circuits and linear systems. Digital communication signals will be used to demonstrate some of these concepts.

**Prerequisite and Corequisites** All students must have completed EE 2101 and 2120 with a grade of C or higher and be enrolled in (or have previously taken) EE 3430.

**Grading** The grade in the class will be based on the following items

- 70% lab experiments
- 10% Practical mid-term exam
- 20% Semester Project

Any student who earns at least 90% of the total points will earn a grade of A in this class. Students who earn at least 80%, 70%, 60% will earn grades of at least B, C, and D respectively. The instructor may lower one or more of these thresholds but will not raise any of them.

**Laboratory Reports** The lab manual is available at the above-listed website. One lab report per group must be submitted by the due date which will be one week after finishing the experiment. Each group must bring their own hardcopy to the lab. The template for the report including the cover page is available on Canvas and must be followed for all reports.

**Late Work** All assignments will have a clearly established due date. Work turned in late may be penalized at a rate of 10% of the maximum possible grade for each business day, or fraction of day, it is late. Business days include all Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays that are not official university holidays. If the work is submitted after 9 complete business days, the work may be given a grade of zero. At the end of the semester, no work will be assigned or accepted for credit after 5:00 pm on the Friday of the last week of lectures. In other words, there will be no class meetings, no examinations, no work assigned, and no work accepted from students during final exam week, or after final exam week.

**Absences** Attendance is expected at every class meeting. If a student feels they must miss a class, the student should contact the instructor as soon as they are aware they will miss, or have missed, the class. Instructors may allow students to miss a limited number of classes without penalty, although students may be expected to either make-up the work, or obtain data so they can still write up the necessary reports, notebooks, etc. Students who miss 5 or more classes may be dropped from the course, at the discretion of the instructor.

**Equipment** It is recommended that you get a breadboard and a flash drive for your group. The flash drive will help take readings from the lab equipment required for the reports.

**Safety** Students must read the safety material from the link given above. Students will be given a multiple-choice safety quiz, with 10 questions on it. Students will be given three chances to earn a passing score on this quiz of 90% or higher. If a student fails to earn a passing grade after three attempts, they may be dropped from the class for their own protection, and the protection of others. If students fail the quiz on the first, or second, attempt, the instructor will show the student which

problems were answered incorrectly. Students will be given time to review the safety material before taking the exam again.

## **Title IX**

Missouri University of Science and Technology is committed to the safety and well-being of all members of its community. US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Furthermore, in accordance with Title IX guidelines from the US Office of Civil Rights, Missouri S&T requires that all faculty and staff members report, to the Missouri S&T Title IX Coordinator, any notice of sexual harassment, abuse, and/or violence (including personal relational abuse, relational/domestic violence, and stalking) disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.

Missouri S&T's Title IX Coordinator is Vice Chancellor Shenethia Manuel. Contact her directly (manuels@mst.edu; (573) 341-4920; 113 Centennial Hall) to report Title IX violations.

To learn more about Title IX resources and reporting options (confidential and non-confidential) available to Missouri S&T students, staff, and faculty, please visit <http://titleix.mst.edu>.

## **Student Conduct**

Students are required to know, and follow, all university regulations regarding academic integrity and conduct. Students are encouraged to review the university regulations on standards of conduct in the Missouri S&T Student Academic Regulations, available on the web at:

<http://registrar.mst.edu/academicregs/index.html>

and also section 200.010 of the University of Missouri System Collected Rules and Regulations, available on the web at:

[www.umsystem.edu/ums/rules/collected\\_rules/programs/ch200/200.010\\_standard\\_of\\_conduct](http://www.umsystem.edu/ums/rules/collected_rules/programs/ch200/200.010_standard_of_conduct)

In addition, students may wish to read the Honor Code which was developed and endorsed by the S&T Student council at:

<http://stuco.mst.edu/about/honor.shtml>

Students who violate university regulations are subject to disciplinary action, which can range from a warning to expulsion from the university.

Well intentioned students are sometimes unsure if a particular action will be considered plagiarism or cheating. In these cases, the student should contact the instructor prior to submitting the work for grading. If the student clearly explains what they intend to do, and follow the directions provided by the instructor, the ECE department will not accuse them of academic dishonesty.

## **S&T connect**

S&T connect provides an enhanced system that allows students to request appointments with their instructors and advisors via the S&Tconnect calendar, which synchronizes with the faculty or staff member's Outlook Exchange calendar. S&Tconnect Early Alert has replaced the Academic Alert system used by Missouri S&T in previous semesters. Students may access S&Tconnect by going to <https://blackboard.mst.edu> and clicking on the S&Tconnect tab.

## **Emergency Exits**

In case of fire or other emergencies, it is important that students know the fastest exit path from the building. As some buildings, including the Emerson Electric Company Hall lack placards showing evacuation paths, it is important that students learn these paths prior to the emergency. The emergency egress plans are available to anyone who has an electronic device with web access, an S&T IT username and password, and the Adobe Acrobat Pro software package (which is freely available on university computers but must be purchased for use on personal computing devices). Once you have the requisite hardware, software and internet access, go to the list of building floor plans at the web site:

<http://designconstruction.mst.edu/floorplan/>

Click on the link for the Emerson Electric Company Hall, or whatever building you plan to visit. Login to the next web page using your S&T username and password. The link for the Emerson Electric Company Hall is at:

<https://designconstruction.mst.edu/media/campussupport/designconstruction/secure/floorplan/R0003.pdf>

Purchase and install Acrobat Pro, if it is not currently available on your device. Then enable the egress map layer of the pdf document you are viewing. A pdf document describing how to use layers in pdf documents is available at

<http://phyfac-web.mst.edu/dcm/pdf/egressmap.pdf>

## **Disability Support Services**

It is the policy and practice of Missouri University of Science and Technology to promote inclusive learning environments. If you have a documented disability, you may be eligible for reasonable accommodations in compliance with university policy, the Americans with Disabilities Act of 1990, the Americans with Disabilities Amendment Act (ADAAA) of 2008, and Section 504 of the Rehabilitation Act of 1973. Please note, students are not encouraged to negotiate accommodations directly with instructors.

To request accommodations or assistance, please self-identify with Disability Support Services (DSS), 203 Norwood Hall. For more information or to register for services, contact DSS at (573) 341-6655 or by email at [dss@mst.edu](mailto:dss@mst.edu).

It is the student's responsibility to provide the instructor with disability accommodation letters with sufficient advance notice to allow the instructor adequate time to make the necessary accommodations.

## **Copyright, FERPA, and Use of Video**

It is vitally important that our classroom environment promote the respectful exchange of ideas. This entails being sensitive to the views and beliefs expressed during discussions whether in class or online. Please obtain instructor permission before recording any class activity. It is a violation of University of Missouri policy to distribute such recordings without authorization and the permission of all who are recorded. More information is provided online.

## **Accessibility and Accommodations**

It is the university's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on a disability, please contact Student Disability Services at (573) 341-6655, [sdsmst@mst.edu](mailto:sdsmst@mst.edu), or visit <http://dss.mst.edu> for information.

## **Student Honor Code and Academic Integrity**

All students are expected to follow the Honor Code.

Page 30 of the Student Academic Regulations handbook describes the student standard of conduct relative to the University of Missouri System's Collected Rules and Regulations section 200.010, and offers descriptions of academic dishonesty including cheating, plagiarism and sabotage (<http://registrar.mst.edu/academicregs/index.html>), any of which will be reported to the Vice Provost for Academic Support.

Other resources for students regarding academic integrity can be found online.

## **Well-Being and UCARE**

Any of us may experience strained relationships, increased anxiety, feeling down, alcohol/drug misuse, decreased motivation, challenges with housing and food insecurity, etc. When your mental well-being is negatively impacted, you may struggle academically and personally. If you feel overwhelmed or need support, please make use of S&T's confidential mental health services at no charge. If you are concerned about a friend or would like to consult with a Care Manager, please make a UCARE referral for support and assistance.

## **Health and Well-Being Canvas Course**

The Health and Well-Being Canvas Course offers the Miner Well-Being Certification Program, a semester-long certification where participants can engage with campus-wide services and initiatives and develop skills that contribute to personal well-being and student success. Students can enroll in the free course at any time.

## **Nondiscrimination, Equity, and Title IX**

Missouri University of Science and Technology is committed to the safety and well-being of all members of its community, and to creating an environment free from discrimination and harassment.

The University does not discriminate on the basis of race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, and any other status protected by applicable state or federal law. As used in this policy, the word “sex” is also inclusive of the term “gender.”

Additionally, US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Violations of this law include sexual harassment, sexual assault, dating/domestic violence, and stalking.

In accordance with The Collected Rules and Regulations University of Missouri, Missouri S&T requires that all faculty and staff members report, to the Missouri S&T Equity Officer, any notice of discrimination disclosed through communication including but not limited to direct conversation, email, social media, classroom papers and homework exercises.

Missouri S&T’s Equity Officer and Title IX Coordinator is Chief Diversity Officer Anitra Rivera. Contact their office at (573) 341-6038; 203 Centennial Hall) to report violations of the university’s nondiscrimination policies, including Title IX. To learn more about resources and reporting options (confidential and non-confidential) available to Missouri S&T students, staff, and faculty, please visit <http://titleix.mst.edu>.

### **LEAD Learning Assistance** (<http://lead.mst.edu>)

The Learning Enhancement Across Disciplines Program (LEAD) sponsors free learning assistance in a wide range of courses for students who wish to increase their understanding, improve their skills, and validate their mastery of concepts and content in order to achieve their full potential. LEAD assistance starts no later than the third week of classes. Check out the online schedule at <http://lead.mst.edu/assist>, using zoom buttons to enlarge the view. Look to see what courses you are taking have collaborative LEAD learning centers (bottom half of schedule) and/or Individualized LEAD tutoring (top half of the schedule). For more information, contact the LEAD office at 341-4608 or email [lead@mst.edu](mailto:lead@mst.edu).

### **Difficulties**

If a student is having difficulties with this course, it is best to start by contacting the TA to describe their concern and seek a solution. TAs should always treat students in a professional manner and do what they can to accommodate reasonable requests and suggestions. If a student is uncomfortable approaching the TA or has done so and is unsatisfied with the result, the student should contact the faculty laboratory coordinator.

If the faculty lab coordinator is unavailable, the student may contact the ECE laboratory coordinator (Dr. Dr. Theresa Swift) or the ECE department chair (Dr. Jonathan Kimball).