# TABLE OF CONTENTS

Calendar Summer Semester 2019 ........................................................................................................ 1
Final Study Day and Exam Schedule .............................................................................................. 3
Registration Procedure .................................................................................................................... 4
Toll-Free Numbers .......................................................................................................................... 4
Application for Admission ............................................................................................................. 4
Total Withdrawal from the University ......................................................................................... 5
Grades ........................................................................................................................................... 5
Graduate Student Change of Registration after the Deadline ....................................................... 5
Full-Time Students ....................................................................................................................... 5
Removal of “Incomplete” Grade .................................................................................................... 6
Repeating a Course ....................................................................................................................... 6
Admission to Candidacy (MS and PhD) ......................................................................................... 6
Continuous Enrollment ................................................................................................................ 6
Consequences of Non-Enrollment without Leave of Absence .................................................... 7
Final Exam for Non-Thesis/Thesis/Dissertation ........................................................................ 7
UT Policy on Insurance for International Students ................................................................. 7
General Seminar .......................................................................................................................... 7
Final Exam Dates ......................................................................................................................... 7
Financial Calendar, Fees, Refunds and Tuition ........................................................................... 8
Honor Statement .......................................................................................................................... 8
The University of Tennessee Policy on a Drug-Free Campus and Workplace ....................... 8
Summer Semester 2019 Course Listings & Descriptions .......................................................... 10
**CALENDAR - SUMMER SEMESTER 2019**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority Registration</td>
<td>February 20, 2019</td>
</tr>
<tr>
<td>Admission to Candidacy Forms for Summer 2019 Commencement</td>
<td>April 26, 2019</td>
</tr>
<tr>
<td>Summer 2019 Graduation Application Deadline</td>
<td>April 26, 2019</td>
</tr>
<tr>
<td>Graduation Fee Payment Deadline (MS $30, PhD $75)</td>
<td>April 26, 2019</td>
</tr>
<tr>
<td>Memorial Day Holiday</td>
<td>May 27, 2019</td>
</tr>
<tr>
<td>Priority Registration Payment Deadline 4:30 p.m. EST</td>
<td>May 28, 2019</td>
</tr>
<tr>
<td><strong>Late Registration and late fees ($100 Late Fee)</strong> May 30 – June 12, 2019</td>
<td></td>
</tr>
<tr>
<td>Classes begin</td>
<td>May 30, 2019</td>
</tr>
<tr>
<td>Last Day to Final Register, Add, Change Grading Options or Drop Without a “W”</td>
<td>June 7, 2019</td>
</tr>
<tr>
<td><strong>Late Registration and late fees after 14th day ($200 Late Fee)</strong> June 13, 2019 - Forward</td>
<td></td>
</tr>
<tr>
<td>Preliminary Thesis/Dissertation Review Deadline</td>
<td>June 10, 2019</td>
</tr>
<tr>
<td>Independence Day Holiday</td>
<td>July 4, 2019</td>
</tr>
<tr>
<td>No Class Day</td>
<td>July 5, 2019</td>
</tr>
<tr>
<td>Last day to schedule final exam (dissertation students)</td>
<td>July 9, 2019</td>
</tr>
<tr>
<td>Last day to take final exam (non-thesis/thesis/dissertation students)</td>
<td>July 16, 2019</td>
</tr>
<tr>
<td>Drop with a “W”</td>
<td>July 19, 2019</td>
</tr>
<tr>
<td>Electronic Thesis/Dissertation to TRACE (5:00 P.M. EST)</td>
<td>July 30, 2019</td>
</tr>
<tr>
<td>Submit report of final examination (Pass/Fail) form</td>
<td>July 30, 2019</td>
</tr>
<tr>
<td>Deadline for Submission of Admission to Candidacy for students</td>
<td>August 9, 2019</td>
</tr>
<tr>
<td>Graduating Fall 2019 and Graduation Application</td>
<td>August 9, 2019</td>
</tr>
<tr>
<td>Deadline for removing &quot;INCOMPLETE&quot; grades</td>
<td>August 9, 2019</td>
</tr>
<tr>
<td>Classes End</td>
<td>August 9, 2019</td>
</tr>
<tr>
<td>Exam Period (Exams are given during the regularly scheduled class meeting times.)</td>
<td>August 9, 2019</td>
</tr>
<tr>
<td>Total Withdraw from the University Deadline</td>
<td>August 9, 2019</td>
</tr>
<tr>
<td>No Commencement Ceremony or Graduate Hooding – Graduation Date</td>
<td>August 10, 2019</td>
</tr>
<tr>
<td>Second thesis/dissertation deadlines</td>
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</tr>
<tr>
<td>Defense Completed by August 9, 2019</td>
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<tr>
<td>Second Deadline Application Submitted by August 9, 2019</td>
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</tr>
<tr>
<td><a href="https://gradschool.utk.edu/forms-central/">https://gradschool.utk.edu/forms-central/</a></td>
<td></td>
</tr>
<tr>
<td>and submit a new graduation application for Fall graduation</td>
<td></td>
</tr>
<tr>
<td>Thesis/Dissertation Submitted and Accepted by August 20, 2019 (5:00 P.M. EST)</td>
<td></td>
</tr>
<tr>
<td>(Student will receive diploma fall 2019 semester, but will not be required to register for thesis/dissertation credits)</td>
<td></td>
</tr>
</tbody>
</table>

**FALL SEMESTER 2019**

<table>
<thead>
<tr>
<th>Event</th>
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<tr>
<td>Priority Registration</td>
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<td>Late Registration</td>
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<td>Classes Begin</td>
<td>August 21, 2019</td>
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<td>Labor Day Holiday</td>
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<tr>
<td>Fall Break</td>
<td>October 17 - 18, 2019</td>
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<tr>
<td>No Class Day</td>
<td>November 27, 2019</td>
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<tr>
<td>Thanksgiving Break</td>
<td>November 28 – 29, 2019</td>
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<tr>
<td>Classes End</td>
<td>December 4, 2019</td>
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<tr>
<td>Study Period</td>
<td>December 5, 2019</td>
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<tr>
<td>Exam Period</td>
<td>December 6, 9 &amp; 10, 2019</td>
</tr>
<tr>
<td>Graduate Hooding Ceremony (UTK)</td>
<td>December 12, 2019</td>
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<tr>
<td>Commencement (UTK)</td>
<td>December 13, 2019</td>
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<tr>
<td>Official Graduation Date</td>
<td>December 14, 2019</td>
</tr>
</tbody>
</table>
Dates may be revised without notice. Please refer to the following sites for updates:

http://registrar.tennessee.edu/academic_calendar/index.shtml
https://gradschool.utk.edu/graduation/
SUMMER SEMESTER 2019

EXAM SCHEDULE

LAST DAY OF CLASSES.................................................................................................................... August 9, 2019

FINAL EXAMS FOR SUMMER ARE GIVEN DURING THE REGULARLY SCHEDULED CLASS MEETING TIMES.

**** ATTENTION ****

ALL STUDENTS TAKING RECORDED COURSES CONTACT INSTRUCTOR FOR DATE AND TIME OF FINAL EXAM
REGISTRATION ANNOUNCEMENT
SPRING SEMESTER 2019

REGISTRATION PROCEDURE

GRADUATE ACADEMIC ADVISING

Graduate students should contact your departmental faculty to arrange an advising appointment. If you’re not accepted into a specific program, the assistant to the dean of graduate studies or the designee may act as your advisor. When the web registration system asks if you’ve discussed your program with your advisor, you must answer yes to continue with the registration process.

REGISTRATION

Students will register at http://my.utk.edu. You will need to log in using your NetID and your NetID password. If you do not know your NetID and NetID password, go to http://onestop.utk.edu/your-classes/registering-for-classes/.

*Log in to MyUTK. You can find a link by looking under “M” on the A-Z index (http://www.utk.edu/alpha/) or by typing myutk.utk.edu directly into your browser. You will need to log in by typing utk/your NetID in the “username” field and then your NetID password in the “password” field.

*Before you attempt to register, clear and pay any financial holds (parking tickets, library fines, fees, etc.).

*Look under the “For Your Review” heading on the MyUTK portal page (located in the upper right-hand corner) for notification of any holds you may have.

*Once you are logged into “My UTK,” scroll down to “UTK Student Registration Links.” Click on “Search for Classes” to look up sections and then register.

*Print a copy of your schedule when you are finished registering.

If you have any questions, call the Office of the University Registrar at 865-974-2101 or contact Charlene Hane in Student Services room D-100, phone 931-393-7228, email chane@utsi.edu.

TOLL-FREE NUMBERS

For a specific office: ........................................... 1-888-822-UTSI (8874) and the extension number.
For general information: .......................................................... 1-888-822-UTSI (8874)
Admissions Office: .......................................................... 1-888-822-UTSI (8874)-37234
Budget and Finance Office: ........................................... 1-888-822-UTSI (8874)-37297
Student Services.......................................................... 1-888-822-UTSI (8874)-37228

APPLICATION FOR ADMISSION

No student will be allowed to register unless a completed Application to the Graduate School of the University of Tennessee, Knoxville (UTK) is on file in the Registrar's Office. An Application for Admission to the UTK Graduate School must be completed online at https://www.applyweb.com/utg and accompanied by a $60.00 non-refundable application fee
made payable to The University of Tennessee Space Institute. All applicants are required to provide one official transcript of all undergraduate and graduate records, GRE test scores and three letters of recommendation when applying. International applicants will also need to include TOEFL scores. GRE scores are a requirement of all departments at UTSI except the Master of Science degree in Industrial Engineering/Engineering Management concentration. Please select UT Space Institute if you plan to attend the Tullahoma campus location. All applications need to be submitted online to the office of Graduate Admissions Knoxville, TN.

Graduate Research Assistantship applications need to be submitted to Clara Ferguson, Office of Admissions and Recruiting, University of Tennessee Space Institute, MS-6, Tullahoma, TN 37388-9700. Assistantship applications must include GRE test scores and three letters of recommendation. All International applicants will need to provide TOEFL test scores in addition to GRE’s. Official transcripts and test scores should be sent to College Code 1843, Graduate Admissions Office, 201 Student Services Building, Knoxville, TN 37996-0221. Once admitted, a full admission will not be granted until all official test scores and degree confirmation are received in the Graduate Admissions Office in Knoxville. Please contact Clara Ferguson at (931) 393-7234 or 888-822-8874 ext. 37234 if you have questions.

TOTAL WITHDRAWAL FROM THE UNIVERSITY

If, after registering for classes and either returning your fee payment or your Confirmation of Attendance form to the Bursar’s Office, you decide not to enroll for this term, you must immediately notify Charlene Hane, Student Services, at UTSI. If you withdraw officially on or before a Change of Registration deadline, but after the no “W” deadline for a particular session, the grade of “W” will be issued.

GRADES

Students may obtain their grades through the web at MyUTK or contact Charlene Hane, Student Services, Office D-100, (931) 393-7228.

GRADUATE STUDENTS CHANGE OF REGISTRATION AFTER THE DEADLINE

To change registration in any way after the deadline, a graduate student must present a request, signed by the instructor(s) and adviser as evidence of their knowledge of the request to Charlene Hane, Student Services at UTSI. Graduate students must verify that ALL changes have been approved by their academic adviser. If the Office of Graduate Student Services approves the change of registration, the change will be noted on the student’s permanent record. THE DROP DEADLINE FOR GRADES AND THE DROP DEADLINE FOR FEE REFUNDS ARE NOT THE SAME.

FULL-TIME STUDENTS

Students enrolled in at least 9 semester hours during the Fall/Spring/Summer semesters are considered full-time. Full-time enrollment of 9 hours for two consecutive semesters or 6 hours for three consecutive semesters is required to fulfill the admission to candidacy doctoral degree residency requirement. Graduate Research Assistants (GRAs) must be enrolled for 9 hours during the Fall/Spring semesters and 6 hours during the Summer. GRAs must also enroll in one of the MABE 595 seminars or a PHYS 599 seminar each semester in which seminars are offered, unless a waiver is granted by the Associate Executive Director.
REMOVAL OF INCOMPLETE GRADES

All Incomplete Grades (I) must be removed prior to graduation. The instructor, in consultation with the student, decides the terms for the removal of the I, including the time limit for removal. If the I is not removed within one calendar year, the grade will be changed to an F. The course will not be counted in the cumulative grade point average until a final grade is assigned. No student may graduate with an I on the record. Students planning to graduate Spring Semester 2019 must remove all **INCOMPLETE GRADES** by August 9, 2019. Contact Charlene Hane, Student Services, to remove an Incomplete Grade.

REPEATING A COURSE

No graduate student may repeat a course for the purpose of raising a grade already received, with the exception of a NC course. A graduate student cannot do additional work nor repeat an examination to raise a final grade.

ADMISSION TO CANDIDACY

MASTER OF SCIENCE DEGREE:

Each M.S. student, including IE Capstone Project students, is responsible for submitting a completed and signed Admission to Candidacy Application at least one semester prior to receiving the degree.

Candidacy committee changes or course changes must be submitted to the committee chairman using a Revision form. If changing from a thesis option to a non-thesis option or vice versa, a new Admission to Candidacy Application must be submitted. All forms must be processed through Student Services.

DOCTORAL DEGREE:

A Doctoral Committee should be formed during the student's first year of doctoral study. Any changes to the doctoral committee (deletions or additions) must be submitted to the Committee Chairman using a Revision form for approval. Each doctoral student is responsible for submitting a completed Admission to Candidacy form signed by the doctoral committee at least one semester prior to receiving the degree. All forms must be processed through Student Services.

CONTINUOUS ENROLLMENT

All degree-seeking graduate students are expected to make a full commitment to their graduate and professional study in order to ensure that they can complete all degree requirements without unnecessary delay. Graduate students are therefore required to maintain an active status through continuous enrollment from the time of first enrollment until graduation.

Continuous enrollment is maintained by registering for a minimum of one graduate credit hour per semester (excluding the summer, unless stipulated otherwise by the program or department). However, students who have started taking dissertation hours (course 600) must maintain a minimum of three credit hours per semester during all semesters, including the summer, as stipulated in the policy on "Registration for Course 600 (Doctoral Research and Dissertation)" in order to comply with the Continuous Enrollment requirement (see under Doctoral Programs for details).
The minimum enrollment for international students may be different, and international students always need to check with the Center for International Education (CIE) in order to determine what minimum enrollment they need to maintain in order to satisfy all enrollment requirements attached to their specific visa.

**CONSEQUENCES OF NON-ENROLLMENT WITHOUT LEAVE OF ABSENCE**

Graduate students who do not maintain continuous enrollment as stipulated in the "Continuous Enrollment" policy will lose their active student status. A student who has lost his or her active status without having been granted a Leave of Absence for the period of non-enrollment ahead of time will not be allowed to continue in his her graduate program until readmitted. (see policy on "Readmission" in the Graduate Catalog for more details).

Non-enrollment other than during an approved Leave of Absence (LOA) does not alter or affect any of the milestone deadlines, such as admission to candidacy, time to degree, etc.

Upon approval for readmission to complete the interrupted degree program, students will be retroactively enrolled in every semester of missed enrollment for one graduate credit hour of Course 502 or for three graduate credit hours of Course 600 (whichever is appropriate). Students will be responsible for paying the past tuition charges and fees as well as the current university per semester late registration penalty. All past due charges will need to be paid before the Graduate School will approve the student for any future enrollment.

**FINAL EXAM FOR NON-THESIS, CAPSTONE PROJECT STUDENTS, THESIS AND DISSERTATION STUDENTS**

A candidate presenting a thesis or dissertation must pass a final oral examination on all work offered for the degree. The examination is scheduled through Student Services. Failure to notify Student Services of the examination date will put the student at risk for graduating that semester. Final examinations not properly scheduled MUST be repeated. The final draft of the thesis must be distributed to the committee members at least two weeks prior to the date of the final examination. In case of a grade of "Fail", the candidate may not apply for re-examination until the following semester. The result of the second examination is final.

**UT POLICY ON INSURANCE FOR INTERNATIONAL STUDENTS**

All foreign national students registered with the University of Tennessee, Knoxville, are required to have comprehensive medical insurance. The policy for the 2018-2019 academic year is provided by United HealthCare Student Resources. The premium must be paid before registration. Contact the Student Services Office (room D-100 ext. 37228) for further information.

**GENERAL SEMINAR**

A number of seminars of interest to all UTSI students and general public will be offered throughout the semester.

**FINAL EXAM DATES**

Final exams for summer semester are given during the regularly scheduled class meeting time.
FINANCIAL CALENDAR, FEES, REFUNDS, AND TUITION

Please click http://onestop.utk.edu/tuition-fees/ link to the most current information. You may also contact Tonya Travis in the Business and Finance Office at ttravis@utsi.ed or phone number 931-393-7297.

The UTSI Budget and Finance Accounts Receivable Office will no longer accept payment for tuition and fees by credit card. All students will need to login to MyUTK One Stop to make secure payments online. Priority registration payment deadline is May 28, 2019 by 4:30 p.m. Eastern Time.

Please see One Stop - Paying Tuition and Fees webpage for more details http://onestop.utk.edu/pay/.

Credit or Debit Cards

There is a 2.75% service fee for these payments. UT has a contract with an outside vendor to provide this service. The vendor retains the fee in full.

HONOR STATEMENT

The following Honor Statement is signed by all students applying to The Graduate School:

"An essential feature of The University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

For official information on all UTK Graduate School policies, refer to the current UTK Graduate Catalog available at http://catalog.utk.edu. The student handbook “Hilltopics” is available online at https://hilltopics.utk.edu/

The University of Tennessee Space Institute reserves the right to cancel any class with an insufficient number of students, or for other reasons.

THE UNIVERSITY OF TENNESSEE POLICY ON A DRUG-FREE CAMPUS AND WORKPLACE

In support of the Drug-Free Workplace Act of 1988 (Public Law 100-690) and the Drug-Free Schools and communities Act of 1989, the University of Tennessee is notifying all students, faculty, and staff of the following university policy approved by the UT Board of Trustees on 21 June 1990.

It is the policy of the University of Tennessee to maintain a safe and healthful environment for its students and employees. Therefore, university policy prohibits the unlawful use, manufacture, possession, distribution, or dispensing of drugs ("controlled substances" as defined in the Controlled Substances Act, 21 U.S.C. 812) and alcohol on university property or during university activities.

Violation of this policy is grounds for disciplinary action--up to and including immediate discharge for an employee and permanent dismissal of a student. Federal and state laws provide additional penalties for such unlawful activities, including fines and imprisonment (21 U.S.C. 841
et seq.; T.C.A. 39-6-401 et seq.). Local ordinances also provide various penalties for drug- and alcohol-related offenses. The university is bound to take all appropriate actions against violators, which may include referral for legal prosecution or requiring the individual to participate satisfactorily in an approved drug use or alcohol abuse assistance or rehabilitation program.
THE UNIVERSITY RESERVES THE RIGHT TO REVISE ANY INFORMATION LISTED IN THIS TIMETABLE OF CLASSES

The University of Tennessee Space Institute
Summer 2019 Course Listings

AEROSPACE ENGINEERING

AE 500 Thesis (1-15)
  002 CRN 81599 Abedi
  003 CRN 81600 Balas
  004 CRN 81601 Brooks
  005 CRN 81602 Kreth
  009 CRN 81606 Moeller
  010 CRN 81607 Schmisseur
  011 CRN 81608 Solies
  013 CRN 81610 Vakili
  014 CRN 81611 Zhang

Grading Restriction: P/NP only.
Repeatability: May be repeated.
Credit Level Restriction: Graduate credit only.
Registration Restriction(s): Minimum student level – graduate.

AE 502 Registration for Use of Facilities (1-15)
SEC. 003 CRN 81614 Moeller

Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed.

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated.
Credit Restriction: May not be used toward degree requirements.
Credit Level Restriction: Graduate credit only.
Registration Restriction(s): Minimum student level – graduate.

AE 590 Selected Engineering Problems (2-6)
SEC. 001 CRN 81615 Abedi
  002 CRN 81616 Balas
  003 CRN 81617 Brooks
  004 CRN 81877 Kreth
  005 CRN 81878 Moeller
  006 CRN 81879 Schmisseur
  007 CRN 81880 Solies
  008 CRN 81881 Vakili
  009 CRN 81882 Zhang

Repeatability: May be repeated. Maximum 6 hours.
Comment(s): Enrollment limited to students in problems option.
Registration Permission: Consent of advisor.
AE  600  Doctoral Research and Dissertation (3-15)
SEC.  002 CRN 81619  Abedi
003 CRN 81620  Balas
004 CRN 81621  Brooks
005 CRN 81622  Kreth
011 CRN 81628  Moeller
012 CRN 81629  Schmisseur
013 CRN 82132  Solies
014 CRN 82635  Vakili
015 CRN 82636  Zhang

Grading Restriction: P/NP only.
Repeatability: May be repeated.
Registration Restriction(s): Minimum student level – graduate.

BIOMEDICAL ENGINEERING

BME  500  Thesis (1-15)
SEC.  010 CRN 82446  Johnson

Grading Restriction: P/NP only.
Repeatability: May be repeated.
Credit Level Restriction: Graduate credit only.
Registration Restriction(s): Minimum student level – graduate.

BME  502  Registration for Use of Facilities (1-15)
SEC.  002 CRN 83972  Johnson

Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed.

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated.
Credit Restriction: May not be used toward degree requirements.
Credit Level Restriction: Graduate credit only.
Registration Restriction(s): Minimum student level – graduate.

BME  529  Applications of Linear Algebra in Engineering Systems (3)
SEC.  001 CRN 81645  (Video Recorded)
TIME:  Monday, Wednesday & Friday 9:30 – 10:45 E-111
PROF:  Dr. Monty Smith

Fundamental concepts of linear algebra to problems in engineering systems: steady state and dynamic systems. Geometric and physical interpretations of relevant concepts: least square problems, LU, QR, and SVD decompositions of system matrix, eigenvalue problems, and similarity transformations in solving difference and differential equations; numerical stability aspects of various algorithms; application of linear algebra concepts in control and optimization studies; introduction to linear programming. Computer projects.

Cross-listed: (Same as Chemical and Biomolecular Engineering 529; Civil Engineering 529, Electrical and Computer Engineering 529; Environmental Engineering 529; Industrial Engineering 529; Materials Science and Engineering 529; Mechanical Engineering 529; Nuclear Engineering 529).

Comment(s): Graduate standing or consent of instructor required.

BME  590 Selected Engineering Problems (2-6)  
SEC.  001 CRN  84234  Johnson

Grading Restriction: Satisfactory/No Credit grading only.  
Repeatability: May be repeated. Maximum 6 hours.  
Comment(s): Enrollment is limited to students in the non-thesis option.  
Credit Level Restriction: Graduate credit only.  
Registration Restriction(s): Minimum student level – graduate.  
Registration Permission: Consent of instructor.

BME  600 Doctoral Research and Dissertation (3-15)  
SEC.  009 CRN  82447  Johnson

Grading Restriction: P/NP only.  
Repeatability: May be repeated.  
Registration Restriction(s): Minimum student level – graduate.

ENGINEERING MANAGEMENT

EM  502 Registration for Use of Facilities (1-15)  
SEC.  001 CRN  80003  Simonton

Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed.

Grading Restriction: Satisfactory/No Credit grading only.  
Repeatability: May be repeated.  
Credit Restriction: May not be used toward degree requirements.  
Credit Level Restriction: Graduate credit only.  
Registration Restriction(s): Minimum student level – graduate.

EM  536 Project Management (3)  
SEC.  001 CRN  80004  UT Space Campus  
003 CRN  80006  UT Knoxville Campus  
004 CRN  80007  Distance Education Campus  
TIME: Tuesday & Thursday 11:00 - 1:30  
E-113
Development and management of engineering and technology projects. Project proposal preparation; resource and cost estimating; and project planning, organizing, and controlling; network diagrams and other techniques. Role of project manager: team building, conflict resolution, and contract negotiations. Discussion of typical problems and alternative solutions. Case studies and student projects.

Recommended Background: Graduate standing in Engineering or Business.

EM 600 Doctoral Research and Dissertation (3-15)
SEC. 002 CRN 82056 Simonton
004 CRN 83458 Yu

Grading Restriction: P/NP only.
Repeatability: May be repeated.
Registration Restriction(s): Minimum student level – graduate.

INDUSTRIAL ENGINEERING

IE 529 Applications of Linear Algebra in Engineering Systems (3)
SEC. 001 CRN 80101 (Video Recorded)

TEXT: *Advanced Linear Algebra for Engineers with MATLAB*; Sohail A. Dianat and Eli S. Saber;

TIME: Monday, Wednesday & Friday 9:30 – 10:45  E-111

PROF: Dr. Monty Smith

Fundamental concepts of linear algebra to problems in engineering systems: steady state and dynamic systems. Geometric and physical interpretations of relevant concepts: least square problems, LU, QR, and SVD decompositions of system matrix, eigenvalue problems, and similarity transformations in solving difference and differential equations; numerical stability aspects of various algorithms; application of linear algebra concepts in control and optimization studies; introduction to linear programming. Computer projects.


Cross-listed: (Same as Chemical and Biomolecular Engineering 529; Biomedical Engineering 529; Civil Engineering 529, Electrical and Computer Engineering 529; Environmental Engineering 529; Materials Science and Engineering 529; Mechanical Engineering 529; Nuclear Engineering 529).

Comment(s): Graduate standing or consent of instructor required.

MATHEMATICS

Math 535 Partial Differential Equations I (3) CANCELLED
SEC. 001 CRN 85230
**TEXT:**  *Partial Differential Equations of Mathematical Physics and Integral Equations;* Ronald B. Guenther and John W. Lee

**TIME:** Monday, Wednesday & Friday  1:00 – 2:15  E-113

**PROF:** Dr. K.C. Reddy


*Recommended Background: One year of advanced calculus.*

### MECHANICAL ENGINEERING

<table>
<thead>
<tr>
<th>ME</th>
<th>500</th>
<th>Thesis (1-15)</th>
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<table>
<thead>
<tr>
<th>ME</th>
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<th>Registration for Use of Facilities (1-15)</th>
</tr>
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<tbody>
<tr>
<td>SEC.</td>
<td>002</td>
<td>CRN 80201</td>
</tr>
</tbody>
</table>

**Grading Restriction:** P/NP only.

**Repeatability:** May be repeated.

**Credit Level Restriction:** Graduate credit only.

**Registration Restriction(s):** Minimum student level – graduate.

<table>
<thead>
<tr>
<th>ME</th>
<th>529</th>
<th>Applications of Linear Algebra in Engineering Systems (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEC.</td>
<td>001</td>
<td>CRN 80203 (Video Recorded)</td>
</tr>
</tbody>
</table>


**TIME:** Monday, Wednesday & Friday  9:30 – 10:45  E-111

**PROF:** Dr. Monty Smith

Fundamental concepts of linear algebra to problems in engineering systems: steady state and dynamic systems. Geometric and physical interpretations of relevant concepts: least square problems, LU, QR, and SVD decompositions of system matrix, eigenvalue problems, and similarity transformations in solving difference and differential equations; numerical stability aspects of various algorithms; application of
linear algebra concepts in control and optimization studies; introduction to linear programming. Computer projects.


Cross-listed: (Same as Chemical and Biomolecular Engineering 529; Biomedical Engineering 529; Civil Engineering 529; Electrical and Computer Engineering 529; Environmental Engineering 529; Industrial Engineering 529; Materials Science and Engineering 529; Nuclear Engineering 529).
Comment(s): Graduate standing or consent of instructor required.

ME 590 Selected Engineering Problems (2-6)
SEC.
001 CRN 80216 Abedi
002 CRN 80217 Balas
003 CRN 80218 Brooks
004 CRN 82013 Kreth
005 CRN 82014 Moeller
006 CRN 82015 Schmisseur
007 CRN 82016 Solies
008 CRN 82017 Vakili
009 CRN 82018 Zhang

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated. Maximum 6 hours.
Comment(s): Enrollment limited to students in the problems option.
Registration Permission: Consent of advisor.

ME 600 Doctoral Research and Dissertation (3-15)
SEC.
002 CRN 80227 Abedi
003 CRN 80228 Balas
004 CRN 80229 Brooks
005 CRN 80230 Kreth
020 CRN 80245 Moeller
025 CRN 80251 Schmisseur
026 CRN 82405 Solies
028 CRN 82641 Vakili
029 CRN 82642 Zhang

Grading Restriction: P/NP only.
Repeatability: May be repeated.
Registration Restriction(s): Minimum student level – graduate.

PHYSICS

Phys 500 Thesis (1-15)
SEC.
001 CRN 81183 Davis
003 CRN 81185 Parigger
Grading Restriction: P/NP only.
Repeatability: May be repeated.
Credit Level Restriction: Graduate credit only.
Registration Restriction(s): Minimum student level – graduate.

Phys 502 Registration for Use of Facilities (1-15)
SEC. 002 CRN 82104 Davis

Required for the student not otherwise registered during any semester when student uses university facilities and/or faculty time before degree is completed.

Grading Restriction: Satisfactory/No Credit grading only.
Repeatability: May be repeated.
Credit Restriction: May not be used toward degree requirements.
Credit Level Restriction: Graduate credit only.
Registration Restriction(s): Minimum student level – graduate.

Phys 600 Doctoral Research and Dissertation (3-15)
SEC. 001 CRN 81195 Davis
SEC. 003 CRN 81197 Parigger

Grading Restriction: P/NP only.
Repeatability: May be repeated.
Registration Restriction(s): Minimum student level – graduate.