UNIVERSTY OF NORTH TEXAS SYLLABUS
MEEN 4120 AEROSPACE FUNDAMENTALS
SPRING 2020. 3 Credit hours

Instructor: Dr. Mark Wasikowski
Lectures: NTDP B155, MW 10:00 – 11:20 am
Office Hours: NTDP F101L. TR 10 - 11 am, or by appointment
Contact: mark.wasikowski@unt.edu (940) 369-8030 (emergencies only)
Teaching Assistant: TBD

CATALOG DESCRIPTION: Introduction to fundamental knowledge used in aerospace industry. Topics include orbital mechanics, basic aerodynamics, guidance and control methods, flight dynamics, and 6 Degree of Freedom (6-DoF) motion and simulation for aircraft and missiles.

PREREQUISITES: NOT be pre-engineering major and passed the following "C" or better:
1) MEEN 2240 Programming for Mechanical Engineers (MATLAB)
2) MATH 2700 Linear Algebra and Vector Calculus
3) MEEN 3120 Fluid Mechanics
4) MEEN 3230 System Dynamics and Control

TEXT: No required text. Lecture notes provided, based on many references

ABET OUTCOMES: This course addresses the following ABET program outcome(s):
1. Ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

COURSE OBJECTIVES: Apply ABET outcomes to following topics, schedule permitting**.** Atmosphere, aerodynamics, airfoils and wings, airplane performance, stability and control, propulsion, rotorcraft, rockets, missiles, structures, aero-elasticity, 6 DOF simulation, guidance, navigation, orbit mechanics, space flight.

GRADING RUBRIC: standard 90/80/70/60 scale.

1. 15%: **Attendance and Participation**: when attendance taken, performed via roll call. Must be present when called for credit. No late attendance. Active participation expected. Excessive preoccupation voids attendance. Team classroom discussion topics/assignments
2. 25%: **Home Projects**: weekly via CANVAS. May include software.
3. 40%: **Quizzes**: **4 @ 10% each**. multiple choice in-class scantron
4. 20%: **Final**: multiple choice in-class scantron during final exam week

REGRADE REQUESTS: must be made day assignment is returned/discussed. Once class over, requests not accepted. Entire assignment will be regraded, which may result in lower score.

PROJECT COLLABORATION: MATLAB/SIMULINK or other codes run to verify results. Codes submitted to Turnitin to check for copying. Codes showing > 75% similarity receive 0 score.

CALCULATORS: Graphing calculators not allowed during quizzes. Operating a calculator not on the following list is considered academic dishonesty. Acceptable calculators are:

1. Casio: All fx-115 / fx-991 models (must have "fx-115" or "fx-991" in its model name.)
2. Hewlett Packard: The HP 33s and HP 35s models, but no others
3. Texas Instruments: All TI-30X / TI-36X (must have "TI-30X" or "TI-36X" in its name.)

SOLUTION MANUALS/ON-LINE RESOURCES: It is common knowledge that solution manuals (i.e. Chegg) to textbooks are online. If you utilize them, use correctly. Simply copying solution not beneficial. It is detrimental to learning and grade. To use them properly, attempt all problems on your own. If you get stuck, work more. Check work and find mistakes. The only way to do this is to work problems. This not only improves understanding but leads to better problem solving skills.

ACCEPTABLE BEHAVIOR: I consider this room to be place where you will be treated with respect. All are expected to contribute to respectful and inclusive environment. Students engaging in unacceptable behavior will be directed to leave classroom and instructor may refer student to Dean of Students to consider whether conduct violated Code of Student Conduct. We enforce Code of Student Conduct at deanofstudents.unt.edu/conduct.

ACADEMIC INTEGRITY STANDARDS AND SANCTIONS FOR VIOLATIONS: According to UNT Policy 06.003, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. Academic dishonesty will not be tolerated and will result in zero assignment score and reported to Office of Academic Integrity. No exceptions.

ADA STATEMENT: UNT makes reasonable academic accommodation for students with disabilities. For additional information see the ODA website at disability.unt.edu

STUDENT PERCEPTIONS OF TEACHING EFFECTIVENESS (SPOT): Course participates in SPOT evaluations (http://spot.unt.edu/ or email spot@unt.edu).

RETENTION OF STUDENT RECORDS: Course follows Family Educational Rights and Privacy Act (FERPA) laws and UNT Policy 10.10, Records Management and Retention.

SYLLABUS CHANGES Instructor reserves right change syllabus. Any changes announced in class and posted to CANVAS with an accompanying email to student's UNT email address.