# COURSE SYLLABUS

<table>
<thead>
<tr>
<th>Course Number:</th>
<th>EIA 3237C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisite(s):</td>
<td>EIA 1049, EIA2284C, EIA 3264C</td>
</tr>
<tr>
<td>Course Title:</td>
<td>Transportation Systems</td>
</tr>
<tr>
<td>Course Credit:</td>
<td>3</td>
</tr>
<tr>
<td>Course Hours:</td>
<td>3</td>
</tr>
<tr>
<td>Department: Workforce Education and Development</td>
<td>Supplies: TBA and TaskStream</td>
</tr>
<tr>
<td>Faculty Name:</td>
<td>Dr. David White</td>
</tr>
<tr>
<td>Term and Year:</td>
<td>Fall 2010</td>
</tr>
<tr>
<td>Place and Time:</td>
<td>MST 114 5:30pm - 8:00pm Thursday</td>
</tr>
<tr>
<td>Office Location:</td>
<td>MST 119</td>
</tr>
<tr>
<td>Office Hours</td>
<td>Telephone: 599-3406</td>
</tr>
<tr>
<td>Monday 4:30 – 5:30</td>
<td>e-mail: <a href="mailto:david.white@famu.edu">david.white@famu.edu</a></td>
</tr>
<tr>
<td>Tuesday 11:00-2:30</td>
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<tr>
<td>Wednesday 4:30 – 5:30</td>
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<tr>
<td>Thursday 11:00-2:30</td>
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<td>4:30 – 5:30</td>
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<tr>
<td>Friday</td>
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<tr>
<td>Saturday</td>
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</table>

## Course Description

This course focuses on developing a basic understanding of transportation systems that include: land, water, air and space transportation. Students will engage in design processes and problem solving laboratory exercises to explore the diverse components of transportation systems and subsystems to be taught in technology education classrooms (Sophomore/Junior standing).

## Course Purpose

The overarching purpose of this course is to identify and make comparisons of past developments, present technology, and future trends in transportation. Identify efficient structural designs and materials as they relate to vehicular performance in the four environments. Analyze the function of support systems as they relate to transportation. Compare the various types of suspension systems and determine their operational requirements for each environment. Recognize and determine how guidance systems are integral parts of any transportation system Compare various control devices and their operation in each environment. Apply and interrelate the various systems of measurement used in transportation. Design, produce, test and analyze the behavior of transportation systems. Integrate and use mathematics and scientific principles as they apply to transportation system design and performance. Recognize the importance of additional curricular areas (STEM, communication, art, social studies, economics, etc.) during the design and presentation stages of problem solving.

TaskStream Code: 22B8UU
The Conceptual Framework in the Professional Education Unit (PEU) at Florida A&M University is an integrated approach to providing educational experiences that result in exemplary professional educators. The Framework is comprised of six themes with the mission of developing high quality classroom teachers, administrators and support personnel. The term “exemplary” refers to the kind of graduates the PEU strives to produce. The figure below provides a diagram of the Exemplary Professional Conceptual Framework.

![Professional Education Unit Conceptual Framework](image)

**TECHNOLOGY**

**CF 2**

*Through this focal area, the FAMU professional education candidate will:*

| CF: 2.1 (S) Use of available technology and software to support student learning. | F: 4,12 | I: 6 |
| CF: 2.4 (K) Understand fundamental concepts in technology. | F: 2,12 | I: 6 |

**VALUES**

**CF3**

*Through this focal area, the FAMU professional education candidate will:*

| CF: 3.3 (S,D) Show respect for varied (groups) talents and perspectives. | F: 5,6 | I: 3 |

**CRITICAL THINKING**

**CF4**

*Through this focal area, the FAMU professional education candidate will:*

| CF: 4.2 (S) Use a variety of instructional/professional strategies to encourage students’ development of critical thinking and performance. | F:2,7 | I: 4 |
| CF: Acquire performance assessment techniques and | | |

2
4.4 (K) | strategies that measure higher order thinking skills of student. | F:1,4 | I: 1,8

| CF: 4.5 (S) | Demonstrate the use of higher order thinking skills. | F: 8 | I: 4

**PROFESSIONALISM**

- **CF 5**
- **Through this focal area, the FAMU professional education candidate will:**

| CF: 5.3 (D) | Demonstrate commitment to professional growth & development. | F:3,7 | I: 9

| CF: 5.4 (K,S) | Use major concepts, principles, theories & research related to the development of children and adults. | F: 7 | I: 2

| CF: 5.5 (S) | Construct learning opportunities that support student development & acquisition of knowledge & motivation. | F: 7 | I: 5

**Academic Learning Compact**

This course falls under the courses offered in the Department of Workforce Education and Development and is thus covered by the associated Academic Learning Compacts (ALCs). ALCs answer three basic questions: What will students learn by the end of their academic programs? Have they learned what they have been taught by their professors? How do we measure these quantities? For details regarding the Department of Workforce Education and Development, ALCs, go to: [http://www.famu.edu/assessment](http://www.famu.edu/assessment) and click on Academic Learning Compacts.

**Overall Goals of the Course**

The overall goal of this course is to prepare candidates to become creative problem solvers and reflective practitioners within the content area of Technology Education provided within the course.
Matrix for Alignment with Standards and the
The Florida Agricultural and Mechanical University
College of Education Conceptual Framework

Standards with which the course objectives are aligned:
- The Florida Agricultural and Mechanical University College of Education and Human Services Conceptual Framework (FAMU CF)
- Florida Educator Accomplished Practices (FEAP)
- Florida Subject Area Competencies (FSAC)
- International Technology and Engineering Education Association (ITEEA)
- Interstate New Teacher Assessment and Support Consortium (INTASC)

<table>
<thead>
<tr>
<th>Course Objectives</th>
<th>INTASC (I)</th>
<th>FSAC (FS)</th>
<th>FAMU CF (CF)</th>
<th>FEAP (FE)</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Identify and make comparisons of past developments, present technology, and future trends in transportation.</td>
<td>3</td>
<td>FS: 1.4, 1.5, 1.6, 1.7</td>
<td>CF: 3.3</td>
<td>FE: 5, 6</td>
<td>Discussion Board 1</td>
</tr>
<tr>
<td>2) Identify efficient structural designs and materials as they relate to vehicular performance in the four environments.</td>
<td>1, 4, 6, 8</td>
<td>FS: 1.3, 3.1, 3.2, 3.3</td>
<td>CF: 2.4, 2.4, 2.5</td>
<td>FE: 1, 2, 4.3, 4.4</td>
<td>Discussion Board 2 (video)</td>
</tr>
<tr>
<td>3) Analyze the function of support systems as they relate to transportation.</td>
<td>4</td>
<td>FS: 8.1</td>
<td>CF: 4.2, 4.5</td>
<td>FE: 2, 7, 8</td>
<td>Final Project Documentation</td>
</tr>
<tr>
<td>4) Recognize and determine how guidance systems are integral parts of any transportation system.</td>
<td>4</td>
<td>FS: 8.1</td>
<td>CF: 4.2, 4.5</td>
<td>FE: 2, 7, 8</td>
<td>Navigation/GPS Technology Learning Activity</td>
</tr>
<tr>
<td>5) Compare various control devices and their operation in each environment.</td>
<td>4</td>
<td>FS: 8.1</td>
<td>CF: 4.2, 4.5</td>
<td>FE: 2, 7, 8</td>
<td>Discussion Board 1</td>
</tr>
<tr>
<td>6) Apply and interrelate the various systems of measurement used in transportation.</td>
<td>4</td>
<td>FS: 8.1, 8.3</td>
<td>CF: 4.2, 4.5</td>
<td>FE: 2, 7, 8</td>
<td>NASA Technology Learning Activity</td>
</tr>
<tr>
<td>7) Design, produce, test and analyze the behavior of transportation systems.</td>
<td>4</td>
<td>FS: 8.3</td>
<td>CF: 4.2, 4.5</td>
<td>FE: 2, 7, 8</td>
<td>Class Presentation Rubric</td>
</tr>
<tr>
<td>8) Integrate and use STEM principles as they apply to transportation system design and performance.</td>
<td>6</td>
<td>FS: 13.2</td>
<td>CF: 5.5</td>
<td>FE: 7</td>
<td>Research Paper</td>
</tr>
<tr>
<td>9) Recognize the importance of additional curricular areas (communication, art, social studies, economics, etc.) during the design and presentation stages of problem solving.</td>
<td>6</td>
<td>FS: 12.6&amp;7 I: 3</td>
<td>CF: 5.5</td>
<td>FE: 7</td>
<td>Research Paper</td>
</tr>
<tr>
<td>10) Discuss the nature of Transportation as it relates to land, water, air and space with an emphasis on careers, the economy, and needs of society.</td>
<td>2</td>
<td>FS: 1.5, 1.6 I: 6</td>
<td>CF: 5.4</td>
<td>FE: 3, 7</td>
<td>Careers in Transportation Technology Learning Activity</td>
</tr>
<tr>
<td>11) Produce documentation (design processes, lesson plans, etc.) that is aligned with current state and national technology standards.</td>
<td>5</td>
<td>FS: 12.6&amp;7 I: 3</td>
<td>CF: 5.5</td>
<td>FE: 7</td>
<td>Final Project Documentation</td>
</tr>
<tr>
<td>12) Continue to develop safety habits and laboratory management techniques.</td>
<td>9</td>
<td>FS: 11</td>
<td>CF: 5.3</td>
<td>FE: 3, 7</td>
<td>Final Project Documentation</td>
</tr>
<tr>
<td>13) Identify local, state, and national professional organizations and explain the benefits of participation with regard to the Transportation Industry.</td>
<td>9</td>
<td>FS: 12.7</td>
<td>CF: 5.3</td>
<td>FE: 3, 7</td>
<td>Correspondence Technology Learning Activity</td>
</tr>
<tr>
<td>14) Continue to develop a professional portfolio</td>
<td>6, 9</td>
<td>FS: 14.5&amp;6 I: 4</td>
<td>CF: 2.1, 2.5, 5.3</td>
<td>FE: 3, 4, 7, 12</td>
<td>TaskStream Artifact Submissions</td>
</tr>
</tbody>
</table>
1. Transportation Technology: Basic Concepts
   A. Definitions
      a. freight mobility
      b. passenger mobility
   B. Historical Perspective
      a. era of animal and wind power
      b. era of steam power
      c. era of the automobile
      d. era of flight
      e. era of space
   C. Environments
      a. terrestrial (land)
      b. marine (water)
      c. atmospheric (air)
      d. space
   D. Routes
      a. fixed
      b. random
   E. Systems/Modes
      a. vehicular
      b. stationary
   F. Axis/Movements
      a. longitudinal/roll
      b. lateral/pitch
      c. vertical/yaw
   G. Technical Subsystems
      a. propulsion systems
         (1) energy sources
            (a) exhaustible
            (b) inexhaustible
            (c) renewable
         b. suspension systems
         c. structural systems
         d. guidance systems
         e. control systems
         f. support systems
   H. Transportation Regulatory Agencies
   I. Careers in Transportation

2. Land Transportation
   A. Purposes
      a. freight mobility
      b. passenger mobility
   B. Routes

3. Water Transportation
   A. Purposes
      a. freight mobility
      b. passenger mobility
   B. Routes
      a. fixed
      b. random
   C. Systems/Modes
      a. lighter-than-air
      b. heavier-than-air
   D. Technical Subsystems
      a. propulsion systems
      b. suspension systems
         (1) fixed-wing
         (2) rotary-wing
         (3) lighter-than-air gas
      c. structural systems
         (1) aircraft designs
         (2) structural materials
      d. guidance systems
      e. control systems
         (1) speed
         (2) direction
         (3) altitude
      f. support systems
   E. Impacts of Water Transportation
   F. Future Trends in Water Transportation

4. Air Transportation
   A. Purposes
      a. freight mobility
      b. passenger mobility
   B. Routes
      a. fixed
      b. random
   C. Systems/Modes
      a. lighter-than-air
      b. heavier-than-air
   D. Technical Subsystems
      a. propulsion systems
      b. suspension systems
         (1) fixed-wing
         (2) rotary-wing
         (3) lighter-than-air gas
      c. structural systems
         (1) aircraft designs
         (2) structural materials
      d. guidance systems
      e. control systems
         (1) speed
         (2) direction
         (3) altitude
      f. support systems
   E. Impacts of Air Transportation
   F. Future Trends in Air Transportation

5. Space Transportation
   A. Purposes
   B. Routes
      a. fixed
      b. random
   C. Systems/Modes
a. fixed
b. random
C. Systems/Modes
a. vehicular
b. stationary
D. Impacts of Land Transportation
E. Future Trends in Land Transportation

3. Water Transportation
A. Purposes
   a. freight mobility
   b. passenger mobility
B. Routes
   a. fixed
   b. random
C. Systems/Modes
   a. inland
   b. oceanic

D. Technical Subsystems
a. propulsion systems
b. suspension systems
   (1) gravity (space)
   (2) fluid (upper atmosphere)
c. structural systems
   (1) space system designs
   (2) structural materials
d. guidance systems
   (1) speed
   (2) direction
   (3) altitude
e. control systems
f. support systems
E. Impacts of Space Transportation

6. Future Trends in Space Transportation

Teaching Methods
A variety of methods may be employed, including, but not limited to: lecture/discussion, field experience, guest speakers, audiovisual materials, computer applications, demonstrations, presentations and lab activities. This course will have a Blackboard component, and students must read relevant sections in current outside resources, including web-based documents and word-processing assignments and have regularly available email, Internet and World Wide Web access. Documentation and artifacts for TaskStream are required.

Methods of Evaluation

1. Technology Learning Activities
2. Discussion Boards
3. Midterm and Final Examinations
4. Research Paper
5. Laboratory Projects (Collaborative and Individual)
6. Presentation Evaluation
Grading:
Grades will be determined using a percentage of total points. The grading scale, with minimum percentages for each grade is provided below. This grading scale will be applied to individual evaluated activities as well as to the student’s final grade.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Points</th>
<th>Percentage/Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology Learning Activity (4)</td>
<td>100</td>
<td>90-100% A</td>
</tr>
<tr>
<td>Lab Projects and Documentation (4)</td>
<td>300</td>
<td>80-90% B</td>
</tr>
<tr>
<td>Blackboard Discussion Boards (2)</td>
<td>50</td>
<td>70-80% C</td>
</tr>
<tr>
<td>Final Project</td>
<td>100</td>
<td>60-70% D</td>
</tr>
<tr>
<td>Final Project Portfolio</td>
<td>50</td>
<td>Below 59% F</td>
</tr>
<tr>
<td>Class Presentation</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Research Paper</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Midterm</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1000 pts</td>
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</tr>
</tbody>
</table>

Course Policies

Dispositions  As a component of student assessment, the College of Education has instituted a system for monitoring the professional dispositions: Professionalism, Effective Communication, Respectful Behavior, Ethical Behavior, and Reflective Behavior. At the end of each semester each instructor will fill out an assessment instrument for each student which will be turned in to the department chair and kept in the student’s file. If a problem arises during the semester, a disposition feedback form may be completed by an instructor or school personnel and turned in to the student’s department chair. The severity of the behavioral deficiency will influence the chairperson’s handling of the situation. (See Assessment Instrument for Dispositions and Disposition Feedback Form for more detailed information. This policy includes provisions for professional dress, attendance, punctuality, use of cell phones, etc.)

Policy Statement on Non-Discrimination  It is the policy of Florida Agricultural and Mechanical University to assure that each member of the University community be permitted to work or attend classes in an environment free from any form of discrimination including race, religion, color, age, disability, sex, marital status, national origin, veteran status and sexual harassment as prohibited by state and federal statutes. This shall include applicants for admission to the University and employment.

Academic Honor Policy  The University’s Academic Honor Policy is located in the FANG Student Handbook, under the Student Code of Conduct- Regulation 2.012 section, beginning on page 55-56.

ADA Compliance  To comply with the provisions of the Americans with Disabilities Act (ADA), please advise instructor of accommodations required to insure participation in this course. Documentation of disability is required and should be submitted to the Learning Development and Evaluation Center (LDEC). For additional information please contact the LDEC at (850) 599-3180.
1. **Attendance:** Attendance is required for all class meetings. It is the responsibility of the student to make up any work/assignments missed due to illness or personal excuses. The student’s final grade will be reduced one letter grade for each absence beyond two unexcused absences. All excused absences must be reported to and verified through the FAMU academic affairs office.

2. **Final Exam:** There will be a comprehensive exam at the end of the course.

3. **Computer/Web/Email Applications:** A variety of graded activities in this course will be conducted using email, the web and BlackBoard. Students are required to use their FAMU email/Blackboard account and to know how to use file attachment features. Also, students must use Microsoft© Word© for all word-processed files, and will prepare a Microsoft© PowerPoint© presentation, and must be able to use an Internet browser. Some web-based resources will be formatted as PDF files. Students should have access to and know how to use Adobe© Acrobat Reader©. Grades will be posted on BlackBoard. Computer access for students is provided at a number of locations on campus. Students may access their FAMU email from other email accounts or computer systems that are not on the FAMU campus. However, it is the student’s responsibility to make sure the email and other computer systems are operational.

4. **Spelling:** Correct spelling is required for all work. Spelling a word incorrectly on any graded item will result in a loss of one-half point for each time the word is misspelled.

5. **Writing Assignments:** Students will complete several writing assignments. Writing assignments must be word-processed using Microsoft© Word©.

6. **Portfolio:** Students are required to purchase a TaskStream account. Three assigned artifacts must be uploaded to your TaskStream portfolio to pass this class.

7. **Professionalism:** Students are expected to conduct themselves in a professional manner at all time while in class. Evaluation of the student’s professionalism will be an important part of the assessment program in this course.

8. **Reading:** Students are expected to read handouts, web pages, web-based documents, etc. to prepare for lectures, quizzes and tests; as well as prepare for research and writing activities through reference reading.

9. **Research:** Several evaluated activities require the student to conduct research. Under normal conditions, the University library resources will meet all the student’s research needs. Internet research activities will also be conducted.

10. **Safety:** It is the student’s responsibility to adhere to and practice proper safety procedures in the use and operation of the tools, materials, machines, and processes required in this course. Safety eyewear is required when working in any technology labs during course or when participating in hands-on lab experiences. **All students must provide and use their own personal safety eyewear.** Students will not be permitted to work in any Technology Education laboratory without approved safety eyewear—**no exceptions**.

11. **Laboratory:** This class has an integrated lecture and lab. Some days may be all lectures or all labs or a combination of both depending on the class progress and activities.

12. **Presentations:** Students will prepare and deliver one presentations. Presentations must be supported by multimedia (typically PowerPoint). Students will also make several informal presentations during class as part of a group or as an individual.

13. **Deadlines:** All evaluated activities must be submitted on the deadlines identified. Ten percent (10%) will be deducted from the student’s grade for each day the activity is submitted late.

14. **Plagiarism and Ethical Behavior:** Students are expected to do their own work and act respectfully to each other and most importantly, the instructor. If student are caught cheating in any way, they may receive a failing grade for the course, dismissal from the program or dismissal from the University.
FAMU Technology Education Student Equity Statement:

Florida A&M University is committed to the human rights, dignity and social equity of all individuals; therefore, in accordance with University policy, the Technology Education Program will maintain a “no tolerance” policy with regard to behavior associated with: sexual connotations, physical gestures, inappropriate language or graphics on clothing. As potential future teachers, it is the expectation of the Technology Education Faculty that all Technology Education Majors and those who are enrolled in Technology Education classes reflect strong professional integrity and act in a manner worthy of the University and the Technology Education Program. The Technology Education Faculty will address any issues according to the University policy in order to create a safe and comfortable learning environment for all students.

- If a student feels that any misconduct as described above has occurred against them, witnesses, or is told of an incident of perceived misconduct then he/she should report the incident to the Equal Opportunity Programs Office. Reports of any incidents will be held in the strictest of confidence. Contact Info: Equal Opportunity Programs Office 676 Ardelia Court Tallahassee, FL 32307 (850) 599-3076/3219.
Laboratory Projects and Assignments

Laboratory Projects

There will be three class laboratory projects throughout the semester, in addition to your final lab project. Each project is designed to provide you with the basic technological skills that you will be using throughout your future courses within the Technology Education Program. Furthermore, each project will incorporate a standards based component that will assist you when designing your final project. The projects will be based on current Technology Education activities taught in contemporary classrooms. They include: Mousetrap Vehicles; Air Boat Project; Hot Air Balloons, and GEOTracking. A Technology Learning Activity will accompany each project for assessment purposes.

| All Course Objectives and Standards are Inherent in the Lab Projects |

- Laboratory Safety
  You are expected to conduct yourself in a safe manner at all times when working in the Technology Education Labs. Failure to practice safety will result in removal from the lab and possible additional disciplinary action depending on the infraction.
  
  Course Objective 12: FAMU CF: 5.3; FEAPS: 3, 7; FSAC: 11; ITEEA: 12, 13; INASC: 9

- Assignments
  
  Course Objective 1: FAMU CF: 3.3; FEAPS: 5, 6; FSAC: 1.4, 1.5; ITEEA: 7, 18; INASC: 3
  Course Objective 5: FAMU CF: 4.2, 4.5; FEAPS: 2, 7, 8; FSAC: 8.1; ITEEA: 13, 18; INTASC: 4

Discussion Board 1: Transportation History – Historical events in any technology allows you (and your potential students) the opportunity to understand the successes and failures that lead to new and improved technology processes. You will conduct a web search that should focus on some important facet of transportation history, either an innovator/inventor or a technical device or process. Your search should include important people and places as well as developments leading up to or contributing to a specific historical event. Technical details of the innovation/invention should also be included. Post your finings on Blackboard. 250 words minimum and be sure to post the link you used to formulate this discussion. Look at at least two of your classmate’s postings and comment on their findings through the “reply” feature of the discussion board.

  BE SURE TO BE PROFESSIONAL WITH YOUR COMMENTS!
  
  Course Objective 1: FAMU CF: 3.3; FEAPS: 5, 6; FSAC: 1.4, 1.5; ITEEA: 7, 18; INASC: 3
  Course Objective 5: FAMU CF: 4.2, 4.5; FEAPS: 2, 7, 8; FSAC: 8.1; ITEEA: 13, 18; INTASC: 4

Discussion Board 2 – Modern Marvels Superhighway video: During the video write down 10 questions you might ask a High School class that reflect key points within the video. Post your questions on Blackboard. Look at at least two of your classmate’s postings and answer their questions through the “reply” feature of the discussion board.

  BE SURE TO BE PROFESSIONAL WITH YOUR COMMENTS!

  Course Objective 2: FAMU CF: 2.4, 4.4; FEAPS: 1, 2, 4, 12; FSAC: 1.3, 3.1; ITEEA: 8, 9, 18; INTASC: 1, 4, 6, 8
Discussion Board 3 – Modern Marvels Subway Video: During the video write down 10 questions you might ask a High School class that reflect key points within the video. Post your questions on Blackboard. Look at at least two of your classmate’s postings and answer their questions through the “reply” in the discussion board. **BE SURE TO BE PROFESSIONAL WITH YOUR COMMENTS!**

**Course Objective 5: FAMU CF: 4.2, 4.5; FEAPS: 1, 2, 7, 8; FSAC: 8.1; ITEEA: 13, 18; INTASC: 4**

- **Technology Learning Activities** - You will have four Technology Learning Activities throughout the semester. The Technology Learning Activities are designed to identify characteristics of a professional teacher and compare them to your individual characteristics in addition to relating them to professional certification requirements, organizations, standards and opportunities within technology education field.

  **Technology Learning Activity 1 – Navigation/GPS Technology Learning Activity.** As an introduction to navigation, your team will present a navigational agenda for a cross-country trip. Working in groups of two or three, you will need to design an itinerary for a cross country trip from Governor’s Square Mall in Tallahassee to Safeco Field in Seattle WA. You may only travel 500 miles per day and use GPS Software (MapQuest; Google Earth) to chart your course. This Technology Learning Activity is designed to assess your basic understanding of Global Positioning Systems that are increasing becoming a part of contemporary Technology Education classrooms and are a vital component to your becoming an effective and informed Technology Educator. **Course Objective 4: FAMU CF: 4.2, 4.5; FEAPS: 2, 7, 8; FSAC: 8.1; ITEEA: 13, 18; INTASC: 4**

  **Technology Learning Activity 2 – NASA Technology Learning Activity.** Your knowledge of basic measurement constructs are inherent in the general education core of classes you are (or have taken), in terms of basic physics (e.g., potential and kinetic energy), mathematical equations (e.g., distance, rate and time etc. and will be utilized throughout this and other courses with the Technology Education Program. This Technology Learning Activity will allow you to explore and gain a deeper understanding of measurement systems from the NASA Education Website. You will explore and report on two measurement systems within this website. **Course Objective 6: FAMU CF: 4.2, 4.5; FEAPS: 2, 7, 8; FSAC: 8.1; ITEEA: 13, 18; INTASC: 4**

  **Technology Learning Activity 3 – Careers in Transportation Technology Learning Activity.** You will be involved with students of variable abilities, career outlooks and interests. You will be a role model and adviser to many of those students. Therefore, it is important that you are aware of career paths and their potentials so you pass on this information. Equally important, you should be aware of resources available to students in their schools that help prepare them for careers after they leave school. You will select three different careers available that relate to the area of transportation. Collect information which includes job title, job description, typical duties performed in that position, post secondary school/training necessary for the position, courses they should take in high school to prepare for the position, position, potential earnings, and schools or training institutes they could possible go to for preparation via an Internet search. **Course Objective 10: FAMU CF: 5.4; FEAPS: 3, 7; FSAC: 1.5, 1.6; ITEEA: 6; INTASC: 2**

  **Technology Learning Activity 4 – Correspondence Technology Learning Activity.** A world of information is available through the Internet. The important problem for students is not what or how, but being able to evaluate the information that is provided for its integrity and applicability. Find a site that interests you with regard to a topic pertaining to transportation. Once you have gathered information for this Technology Learning Activity you answer questions regarding the information provided. **Course Objective 13: FAMU CF: 5.3; FEAPS: 3, 7; FSAC: 12.6, 12.7; ITEEA: 2; INTASC: 9**
• **Research Paper:**
  **Research Focus**
  This assignment allows you to develop an interest and knowledge base pertaining to an area of transportation technology of your choice not covered in class. The focus of this assignment is on contemporary or futuristic technical vehicle or process. Historical studies are not acceptable for this project; however, a component of historical background is acceptable. This paper should be the catalyst for your final project.

**Assignment Requirements**
The goal for this assignment is to develop a *quality* research project that you will be proud to use as a teaching aid in your future classroom. A word processed write-up shall accompany your project which describes impacts of the vehicle or device, description of basic operation, identifies technical sub-systems from the transportation taxonomy, and links to other technology systems and other subject areas (STEM, language arts, social studies, etc.). Your topic must be **pre-approved**.

**Classroom Equation** – Explain ways this material would be relevant in a Technology Education Classroom. The paper should be word-processed, 12 point type, Times or Arial regular font, .75-inch margins all around, line spacing of 1.5, and not exceed three pages. APA formatting is required with a minimum of five citations. Papers will be submitted to Blackboard and will be checked on TurnItIn.com, so do not plagiarize.

| Course Objective 1: FAMU CF: 3.3; FEAPS: 5, 6; FSAC: 1.4, 1.5; ITEEA: 7, 18; INASC: 3 |
| Course Objective 8: FAMU CF: 5.5; FEAPS: 7; FSAC: 13.2; ITEEA: 3; INTASC: 6 |
| Course Objective 9: FAMU CF: 5.5; FEAPS: 7; FSAC: 13.2; ITEEA: 3; INTASC: 6 |

**Final Project**
The goal for this assignment is to develop a *quality* research project by producing a transportation activity that can be done in either a Technology Education High or Middle school setting and that you will be proud to use as a teaching aid in your future classroom. You may collaborate with no more than 2 other classmates. Identification of your topic should be done as soon as possible, and must be approved in advance. Project presentations will be given during the last week of classes.

You will be provided several research sources to produce your activity. Along with the physical project, you will produce a project portfolio with complete documentation. The portfolio must be typed and presented in a clear-bound folder. Neatness will count heavily on your portfolio presentation. The final project portfolio must include the following components:

• **A Detailed Design Brief:**
  The following should be included in your design brief:
  A Background and Rationale for the Project; A Problem Statement; Evidence of Research; Time Constraints and an Evaluation Summary. Additionally, describe the impacts of the vehicle or device, provides a description of the basic operation and the technical sub-systems from the transportation taxonomy. Also describe the links to other technology systems and other subject areas (e.g. STEM, social studies, etc.).

| Course Objective 3: FAMU CF: 4.2, 4.5; FEAPS: 2, 7, 8; FSAC: 8.1; ITEEA: 13, 18; INTASC: 4 |
| Course Objective 11: FAMU CF: 5.5; FEAPS: 7; FSAC: 12.6, 12.7; ITEEA 3; INASC: 5 |
• **Lesson Plan:**
  For your final project portfolio, you will produce a lesson plan that will identify basic components that will assist in your potential students' learning. You will be exposed to several different Technology Education lesson plans (available via Blackboard) and relate them to your final project. You must include what standards will apply, at least two behavioral objectives, materials needed, and an assessment instrument (quiz, test, Technology Learning Activity, etc.).

| Course Objective 11: FAMU CF: 5.5; FEAPS: 7; FSAC: 12.6, 12.7; ITEEA 3; INASC: 5 |

• **Detailed Drawings:**
  For your final project portfolio, you will produce detailed drawings that include: orthographic drawings (front, top and side views), and an isometric view produced in AutoCAD or Inventor.

| Course Objective 11: FAMU CF: 5.5; FEAPS: 7; FSAC: 12.6, 12.7; ITEEA 3; INASC: 5 |

• **Visual Timeline**
  Include a visual timeline that includes digital photographs and dates associated with the progression of your project.

| Course Objective 11: FAMU CF: 5.5; FEAPS: 7; FSAC: 12.6, 12.7; ITEEA 3; INASC: 5 |

• **Class Presentation**
  **Presentation Criteria:** You will produce a class presentation that relates to your final project. Your presentation should engage your audience in all aspects of your project. You should develop a *quality* presentation that you will be proud to use as a teaching aid in your future classroom. Additionally, this will help you to continue to develop the public speaking skills all educators need to teach. The format must be in PowerPoint, and you will make a presentation no longer than 15 minutes and no shorter than 10 minutes.

<p>| Course Objective 7: FAMU CF: 4.2, 4.5; FEAPS: 2, 7, 8; FSAC: 9; ITEEA: 19; INTASC: 4 |
| Course Objective 9: FAMU CF: 5.5; FEAPS: 7; FSAC: 13.2; ITEEA: 3; INTASC: 6 |
| Course Objective 13: FAMU CF: 5.3; FEAPS: 3, 7; FSAC: 12.7; ITEEA: 3; INTASC: 9 |</p>
<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Assignments/Lab</th>
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</table>
| 1    | Introduction and Orientation  
Course Syllabus  
Transportation and Energy Lab Walkthrough | Review the PowerPoint: *An Introduction to Transportation Systems*; Read Chapter 15 of Text. Be prepared to discuss these topics in class. PowerPoint available via Blackboard.  
Correspondence Technology Learning Activity* |
| 2    | Lecture: *An Introduction to Transportation Systems* | Review the PowerPoint: *An Introduction to Vehicular Systems*; Read Chapter 16 of Text. Be prepared to discuss these topics in class. PowerPoint available via Blackboard.  
Lab: Rocket Balloon Project  
Lab: Introduction to Mousetrap Cars Project  
Discussion Board 1 |
| 3    | Lecture: *An Introduction to Vehicular Systems* | Review the PowerPoint: *Land Transportation Systems*; Read Chapter 17 & 18 of Text. Be prepared to discuss these topics in class. PowerPoint available via Blackboard.  
Lab: Mousetrap Cars Project |
| 4    | Lecture: *Land Transportation Systems* | Introduction to Transportation Research Paper*  
Lab: Mousetrap Cars Project |
| 5    | Video: Modern Marvels: Superhighways | Review the PowerPoint: *Water Transportation Systems*; Read Chapter 19 & 20 of Text. Be prepared to discuss these topics in class. PowerPoint available via Blackboard.  
Lab: Mousetrap Cars Competition  
Discussion Board 2 |
| 6    | Lecture: *Water Transportation Systems* | Lab: Air Boats  
Careers in Transportation Technology Learning Activity |
| 7    | Review For Midterm | Lab: Air Boats |
| 8    | Midterm | Review the PowerPoint: *Air Transportation Systems*; Read Chapter 21 & 22 of Text. Be prepared to discuss these topics in class. PowerPoint available via Blackboard.  
Lab: Air Boats |
| 9    | Lecture: *Air Transportation Systems* | Lab: Air Boat Races |
| 10   | Video: Modern Marvels: Subways | Review the PowerPoint: *Space Transportation Systems*; Read Chapter 23 & 24 of Text. Be prepared to discuss these topics in class. PowerPoint available via Blackboard.  
Lab: Hot Air Balloons  
Discussion Board 3* |
| 11   | Lecture: *Space Transportation Systems* | Lab: Hot Air Balloons |
| 12   | Lecture: GEOTracking | Review the PowerPoint: *Intermodal Transportation Systems*; Read Chapter 25 of Text. Be prepared to discuss these topics in class. PowerPoint available via Blackboard.  
Lab: Hot Air Balloons Launch  
NASA Technology Learning Activity |
| 13   | Lecture: *Intermodal Transportation Systems* | Lab: GEOTracking  
Navigation/GPS Technology Learning Activity |
| 14   | No Lecture | Lab: Final Project* |
| 15   | No Lecture | Lab: Final Project |
| 16   | No Lecture  
Review For Final Exam | Class Presentations  
All Work Due |
| 17   | Final Exam | |

All Lab and Assignment Criteria Available via Blackboard  
* Denotes TaskStream Artifact Submission
Syllabus Reference Materials:

California University of Pennsylvania (http://www.cup.edu)
Florida Department of Education Website (http://www.fldoe.org)
Florida Technology Education Association Website (http://www.ftea.com)
Illinois State University (http://www.ilstu.edu)
International Technology Education Association (http://www.ITEAconnect.org)
The Ohio State University (http://www.osu.edu)

References:


### College of Education
**Student Professional Dispositions**
**Fall 2010**

**Candidate’s Name:** _______________________
**Student ID:** ___________
**Program Area:** _______________

<table>
<thead>
<tr>
<th>Criteria for rating</th>
<th>Favorable</th>
<th>Acceptable</th>
<th>Marginal</th>
<th>Unacceptable</th>
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<tr>
<td></td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
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<tr>
<td>The candidate</td>
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<tr>
<td>consistently and</td>
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<tr>
<td>thoroughly demonstrates indicators of performance.</td>
<td>(90–100 %)</td>
<td>(89–80%)</td>
<td>(79–70%)</td>
<td>rarely or never and inappropriately or superficially demonstrates indicators of performance.</td>
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### Professionalism: The Teacher Candidate demonstrates professionalism

(Please use a ✓ to indicate level of performance.)

**Outcome**

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- Punctuality
  - Does not exceed three unexcused absences, per university catalog 2009-2010
  - In class at or before specified time, per Registrar
  - Attends class, field experiences, meetings
  - Appropriate dress and grooming
  - Completes assignments on or before due date
  - Emotional Management
    - Handles feeling appropriately
    - Reacts reasonably to situations
    - Finds a healthy balance between emotions
  - Demonstrates the appropriate use of personal technology during class
  - Follows established protocol and procedures
  - Follows established procedures and policies

### Effective Communication: The Teacher Candidate demonstrates effective communication skills

(Please use a ✓ to indicate level of performance.)

**Outcome**

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- Uses standard English language in various settings
- Uses appropriate tone of voice for the setting
- Clearly articulates concepts (avoids words such as you know, um, uh-uh, and okay)
- Models appropriate respectful communication that is not demeaning or harmful (avoids loud outbursts and profanity)
- Avoids confrontational behavior
### Criteria for rating

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<tr>
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<th>Acceptable</th>
<th>Marginal</th>
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- **Consistsently and thoroughly demonstrates indicators of performance.** (90–100 %)
- **Usually and extensively demonstrates indicators of performance.** (89-80%)
- **Sometimes and adequately demonstrates indicators of performance.** (79-70%)
- **Rarely or never and inappropriately or superficially demonstrates indicators of performance.**

### Respectful Behavior: The Teacher Candidate demonstrates respectful behavior

(Repeat please use a ✓ to indicate level of performance.)

- Considers opinions of others with an open mind (respects diversity)
- Listens to others in a variety of settings
- Provides equitable learning opportunities for all
- Considers background interests and attitudes
- Reacts reasonably to situations (avoids verbal confrontational behavior)

### Ethical Behavior: The Teacher Candidate demonstrates ethical behavior

(Repeat please use a ✓ to indicate level of performance.)

- Demonstrates academic honesty
  - Avoids plagiarizing
- Demonstrates honesty inside and outside of the classroom
- Demonstrates trustworthiness
- Understands the importance of professional code of ethics
- Advocates fairness

### Reflective Behavior: The Teacher Candidate demonstrates reflective behavior

(Repeat please use a ✓ to indicate level of performance.)

- Accepts feedback and suggestions, and incorporates in subsequent practice in various settings
- Demonstrates accurate self-analysis regarding ones strengths and weaknesses