May 28, 2015

Dr. Elizabeth D. Swinford, Superintendent
Tuscaloosa County Schools
Post Office Box 2568
Tuscaloosa, AL 35403-2568

Dear Dr. Swinford:

Upon review of Tuscaloosa County Schools Innovation/Flexibility Zone application, I am happy to approve your request to provide flexibility to be innovative in educating each student based upon individual need while promoting rigorous and relevant learning environments for all students. It is obvious your plan looks carefully at four-year planning alternatives and coursework that should provide more opportunities for students to gain the skills and knowledge needed to be college- and career-ready graduates.

Your continued commitment to innovation in education provides exceptional opportunities to meet the individual and collective needs of your students, preparing each for college and/or career in the 21st century. Attached are approval qualifications for implementing the requests made in Tuscaloosa County Schools Innovation/Flexibility Zone application.

Please remain in communication with Mrs. Karen Porter, kporter@alsde.edu, to share your successes, challenges, and lessons learned that will be valuable in providing helpful guidance to other districts as they seek to develop innovative plans and in moving our state forward.

Sincerely,

Thomas R. Bice
State Superintendent of Education

TRB:KWP:DK

Attachment

cc:  Mrs. Sherrill W. Parris
     Mr. Andy Craig
     Dr. Philip Cleveland
     Dr. Julie P. Hannah
     Mrs. Robin Nelson
     Mrs. Karen Porter
Qualifications and Recommendations for Approval of the Tuscaloosa County Schools 2015 Innovation Plan

1. Concerning the request to allow a full credit for the course entitled *Service Learning-CTE* described in the Tuscaloosa County Innovation Plan as “students participate in classroom-based, school-based, and/or community-based projects that teach skills of civic participation and the ethics of service and civic responsibility – This course is used to enhance the project-based learning in Career and Technical Education (CTE) programs. A district rubric, template for completion, and/or student portfolios ensure the incorporation of specific course components.” Allowable with this recommendation:

- The district should use the appropriate CTE course code number for the Senior Career Pathway Project course and infuse the content of *Service Learning-CTE* with the existing content standards. There is no longer a generic course code number, rather each of the 16 clusters plus Cosmetology has its own course code number for this course and should be used based on the teacher’s certification.

  420077 - Senior Career Pathway Project--Agriculture, Food, & Natural Resources  
  430129 - Senior Career Pathway Project--Architecture & Construction  
  440054 - Senior Career Pathway Project--Arts, A/V Tech, & Communications  
  450032 - Senior Career Pathway Project--Business, Management, & Administration  
  460032 - Senior Career Pathway Project--Education & Training  
  470061 - Senior Career Pathway Project--Finance  
  480076 - Senior Career Pathway Project--Government & Public Administration  
  490045 - Senior Career Pathway Project--Health Science  
  500040 - Senior Career Pathway Project--Hospitality & Tourism  
  510069 - Senior Career Pathway Project--Human Services, FACS  
  510070 - Senior Career Pathway Project--Human Services, Cosmetology  
  520037 - Senior Career Pathway Project--Information Technology  
  530024 - Senior Career Pathway Project--Law, Public Safety, Corrections, & Security  
  540051 - Senior Career Pathway Project--Manufacturing  
  550022 - Senior Career Pathway Project--Marketing, Sales, & Service  
  560111 - Senior Career Pathway Project--Science, Technology, Engineering, & Mathematics  
  570080 - Senior Career Pathway Project--Transportation, Distribution, & Logistics

2. Concerning the request to waive the Cooperative Education (Co-op) restriction for out-of-field work for students where economic conditions limit opportunities to find jobs for students related to specific career objectives –

- This is no longer a requirement. Per the *Alabama Work-Based Learning Manual* (revised November 2014), it is no longer a requirement that the student be placed in a job related to the specific career objective. The requirement is now that the student must simply have a clear career objective (p. 15):

3. Concerning the request to “allow students who are a completer of a CTE program to earn more than two embedded credits in mathematics and/or science – This will allow CTE concentrators or completers to finish coursework that provides certification for careers or skills that takes them directly into college or the workplace following high school. This will allow students to bypass post-secondary technical training and immediately enter the job force after graduating high school.” Allowable with these qualifications:

- Students, regardless of CTE concentrator (a student earning two credits in a CTE program) or completer (a student earning concentrator status in a CTE program and one additional CTE credit) status, have the opportunity to earn mathematics and/or science credit in CTE courses as outlined in an April 3, 2015, memorandum (FY15-1013). Upon completion of required mathematics and science courses, students may choose approved courses in mathematics and science to serve as the additional required credits in that subject area if taught by a teacher holding certification in the appropriate career and technical education area.

- If the district has other CTE courses (or new courses) it would like considered for mathematics and/or science substitution, then the district should submit to Dr. Philip Cleveland, Deputy State Superintendent for Career and Technical Education/Workforce Development, the course title, content standards, and (if applicable) identify an existing course for a cross-walk. At that time, the appropriate Alabama State Department of Education CTE staff and academic program area staff would review the coursework to determine if viable.

- Opportunities for students to earn credentials through CTE coursework is now the primary focus rather than concentrator/completer status.

4. Concerning the request to allow awarding of an Alabama High School Diploma without the traditional English, mathematics, science, and social studies curriculum requirements using flexible credit for CTE coursework/programs that fulfill mathematics, science, social studies, elective, P.E. LIFE, and health requirements – Allowable with these qualifications:

- As referenced in an April 3, 2015, memorandum (FY15-1013), upon completion of required mathematics and science courses, students may choose approved courses in mathematics and science to serve as the additional required credits in that subject area if taught by a teacher holding certification in the appropriate career and technical education area.

- Flexibility exists regarding the Health Education course requirement that can be met with the following course substitutions:

  Foundations of Health Science #490007
  Family Wellness #410012

- Health Science certified teachers are also now approved to teach Health Education #250002.

5. Concerning the request to “allow credit flexibility for extracurricular opportunities (i.e athletics, marching band summer camps/programs, and intense athletic training efforts like Red Cross lifeguard certification) with approval of the TCSS superintendent and through the use of a district
rubric and application to count as the student’s required course, *Lifelong Individualized Fitness Education* (LIFE) or other physical education elective courses.” – Allowable with this caution:

- It is strongly recommended and cautioned, that schools provide each student with counseling related to his/her career path planning when substitute courses are offered. Proposed courses should have a tight cross-walk/match. School personnel should be aware and advise students when substituted courses will not be accepted by a student’s chosen institution of higher education. Also, personnel should consider Alabama High School Athletic Association/NCAA guidelines when advising student athletes on substitute courses to assure retention of eligibility. *This caution applies to all flexibility requests that involve substituting courses/flexible credit for traditional coursework/credit.*

6. Concerning the request to offer to students credit improvement opportunities where participation may result in exceeding the maximum ten credits –

- The maximum ten credits is no longer in effect. Note that state policy allows a student to receive a final grade not to exceed 70 on a 100 point scale.

7. Concerning the request to allow students to participate in the Tuscaloosa County Virtual Learning Center (TCVLC) – Allowable with these qualifications:

- The district should be advised of the Virtual School Act No. 2015-89 and align its policy accordingly before the 2016-2017 school year as stated.
- Caution should be given to Alabama High School Athletic Association/NCAA rules imposed on traditional public school students when determining career path/courses.

8. Concerning the request to allow dual enrollment program students to earn one high school credit for any three+ semester credit hours or five + quarter credit hours at the postsecondary level –

- Per an April 3, 2015, memorandum (FY15-1014) – On March 11, 2015, the Alabama State Board of Education amended the *Alabama Administrative Code*, Rule No. 290-3-1-.02, pertaining to secondary course credit awarded for the postsecondary course work through dual enrollment. The new rule is “one (1) three semester hours postsecondary/college-level course shall equal one (1) high school Carnegie credit in the same or related subject.”
Alabama State Department of Education

Innovation Zone/Flexibility Application

ALABAMA STATE BOARD OF EDUCATION

PLAN 2020

THE VISION
Every Child A Graduate –
Every Child Prepared for
College, Work, and Citizenship
in the 21st Century.

1
Alabama State Department of Education
Innovation Zone/Flexibility Application

Please fill out all appropriate boxes and respond to all questions.
The application/plan must be in 12 pt. font and is limited to 20 pages.

Section 1- Applicant Information

School System: Tuscaloosa County School System
Contact Name & Title: Dr. Elizabeth Swinford, Superintendent
Telephone Number: 205-758-0411
E-Mail Address: drswinford@tcss.net
Number of Schools Involved: 14
Number of Students Served/Affected by Plan: Approximately 9,300
Number of Teachers Involved/Affected by Plan: Approximately 580
Number of Service Personnel Involved/Affected by Plan: NA
Please place a check beside the appropriate entity (ies) applying for Innovation Zone designation:

☐ School  ☑ District  ☐ Feeder System of Schools

Please complete the chart below for the District's leadership team that will support plan

<table>
<thead>
<tr>
<th>Name of Team Member</th>
<th>Title</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Deron Cameron</td>
<td>Director of Curriculum and Instruction</td>
<td></td>
</tr>
<tr>
<td>Dr. Amanda Cassity</td>
<td>Director of Curriculum and Instruction</td>
<td></td>
</tr>
<tr>
<td>Dr. Walter Davie</td>
<td>Deputy Superintendent</td>
<td></td>
</tr>
<tr>
<td>Mr. Dennis Duncan</td>
<td>Director of Career and Technical Education</td>
<td></td>
</tr>
<tr>
<td>Mrs. Karla Griffin</td>
<td>Director of Curriculum and Instruction</td>
<td></td>
</tr>
<tr>
<td>Mrs. Gwen Harper</td>
<td>Coordinator of Accountability</td>
<td></td>
</tr>
<tr>
<td>Mr. Greg Hurst</td>
<td>Director of Student Services</td>
<td></td>
</tr>
<tr>
<td>Dr. Elizabeth Swinford</td>
<td>Superintendent</td>
<td></td>
</tr>
<tr>
<td>Mrs. Cheryl Wallace</td>
<td>Coordinator of Assessment</td>
<td></td>
</tr>
</tbody>
</table>

Please complete the chart below for each school that will be involved/affected by the plan

<table>
<thead>
<tr>
<th>School Name</th>
<th>Name of Team Member</th>
<th>Title</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brookwood High School</td>
<td>Mrs. Laura McBride</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Hillcrest High School</td>
<td>Mrs. Allison Mays</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Holt High School</td>
<td>Dr. Rachael McDaniel</td>
<td>Principal</td>
<td></td>
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<tr>
<td>Northside High School</td>
<td>Mrs. Cindy Long</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Sipsey Valley High School</td>
<td>Mr. Dennis Alvarez</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Tuscaloosa County High School</td>
<td>Mr. Mark Franks</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Brookwood Middle School</td>
<td>Mrs. Becky Brown</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Collins-Riverside Middle School</td>
<td>Mr. Bryant Williams</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Davis-Emerson Middle School</td>
<td>Mr. Marlon Murray</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Duncanville Middle School</td>
<td>Mrs. Kaye Ridgway</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Echols Middle School</td>
<td>Mr. Jason Stapp</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Hillcrest Middle School</td>
<td>Mr. C'Klimba Hobbs</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Northside Middle School</td>
<td>Mr. Bobby Beasley</td>
<td>Principal</td>
<td></td>
</tr>
<tr>
<td>Sipsey Valley Middle School</td>
<td>Mr. Frank Kelly</td>
<td>Principal</td>
<td></td>
</tr>
</tbody>
</table>
Section 2- Abstract and Waiver Requests

Provide a project summary that briefly describes the project's vision, goals, activities, and key features for student success that will be addressed. Please include how the proposal reflects Alabama's PLAN 2020. Please limit the length of the abstract to the text box found on this page only.

The Tuscaloosa County School System is committed to preparing ALL students for life after high school. The development and implementation of Alabama's PLAN 2020 has empowered the district to promote flexible alternatives for high school graduation through four-year planning and coursework that both interests students and satisfies academic content requirements for school coursework. There are several other innovative options that would further our opportunity to allow students to take relevant and rigorous coursework without all of the "traditional" graduation requirements. The outcomes for this request are as follows:

- Allow "flexible" credit for career technical coursework/programs that fulfill math, science, social studies, elective, PE LIFE, and health requirements. "Flexible" credit provides personalized educational options for students in which they will identify, acquire, and demonstrate mastery in a given career technical content area to earn graduation credit. The career technical education electives offered within the district and within the Tuscaloosa City School System's Tuscaloosa Career and Technology Academy (TCTA) provide students with the opportunity to explore and gain skills relating to their career interests. If granted flexibility, these CTE electives would fulfill traditional course requirements. The correlation crosswalk overview is attached to the application.

- Allow students who are a completer of a Career and Technical Education program to earn more than two embedded credits in math and/or science.

- Allow credit flexibility for district pre-approved extracurricular opportunities (i.e. athletics, marching band, summer camps/programs, additional activities and other types of camps/programs, intense athletic training efforts such as Red Cross lifeguard certification) to count as the student's required Lifelong Individualized Fitness Education (LIFE) course or other physical education electives. Credits will be awarded based on crosswalks of the Alabama Course of Study standards and knowledge and skills required in the after school or summer camp/training/experience. A district rubric will be utilized to ensure cohesiveness and consistency for each camp and/or program submitted for elective approval. District approved extracurricular opportunities that meet course standards would be allowed to count as the Lifelong Individualized Fitness Education (LIFE) credit or for an elective credit (based on application information). For example, our system has students who devote a significant amount of time participating in dance, music, competitive swimming, equestrian teams and numerous other activities. Additionally, there are students who receive Red Cross training for lifeguard certification (which includes CPR certification) or other training required to serve as a camp counselor, etc. The district rubric and application are attached to the application.

- Request permission to offer students credit improvement opportunities. Students' participation in credit improvement may result in them exceeding the previously identified maximum ten credits. This would allow students who may need or want to take a course for additional credit an opportunity to do so. Students may attempt credit improvement through advancing credit, obtaining credit, recovering credit and/or repeating credit. Credit improvement may be attempted in math, English, science, social studies and/or elective classes. Students will be permitted to take courses through traditional and non-traditional scheduling year round (including summer months).

- Tuscaloosa County Virtual Learning Center (TCVLC) will offer a county-wide distance learning program to students in middle and high school who need a home-based or non-traditional environment. Students that live within the attendance zone of the Tuscaloosa County School System may apply for enrollment in the Tuscaloosa County Virtual Learning Center. The center will be structured to effectively serve at-risk students who could have dropped out, are credit deficient, have been retained or recommended for retention, have never been proficient in required ALSDE examinations, have attended multiple schools, or are simply interested in enrolling in an online learning environment. The district program description of the Tuscaloosa County Virtual Learning Center is attached to the application.

- Request to waive Co-Op restriction for out-of-field work for students where economic conditions limit opportunities to find jobs for students related to specific career objectives.

- Allow a full credit to be awarded to the course entitled Service Learning – CTE. In this course, students will participate in classroom-based, school-based, and/or community-based projects. Service learning is coordinated with a school or community service program and with the community. It is integrated into and influences the lifelong learning of a participant and includes structured time for the participants to reflect on the service experience. Service learning teaches the skills of civil participation and develops an ethic of service and civic responsibility. Students will provide service in the community
through public, non-profit agencies, civic charitable and governmental organizations and school campuses. This course is used to enhance the project-based learning in Career and Technical Education programs. This course is utilized to accommodate for travel when our students are enrolled in courses at other high school campuses within our district, in courses at TCTA and in courses taken at post-secondary institutions (dual enrollment). A district rubric, template for completion and/or student portfolios will be utilized to ensure specific components of the course are incorporated. The student portfolios will expand on the four-year plan developed by each student. The district rubric and template are attached to the application.

- Allow students participating in dual enrollment programs to earn one high school credit for any three+ semester credit hours or five+ quarter credit hours at the postsecondary level. Providing a "one to one" opportunity would result in the following: increase dual enrollment participation; increase the number of students entering post-secondary institutions; increase the number of students receiving career and technical education certification; and increase the rate in which students are able to enter the workforce. Ultimately, providing this opportunity would allow high school students to receive credits toward their high school diploma and prepare students for higher-demand, higher-wage jobs (i.e. electrician, welder or mechanic).

We believe this program reflects Plan 2020 because it promotes rigorous and relevant learning environments for students. It provides an opportunity for each student enrolled in the Tuscaloosa County School System to have an individualized learning plan. Students will be challenged academically and pursue areas relevant to their interests. Most importantly, they will be provided more opportunities to gain the skills and knowledge needed to be a college and career ready graduate who is prepared for life.

**Waiver Requests**

Indicate the specific type(s) of policy or code that prohibit or constrain the project that you wish to request a waiver from:

- Specific waiver requested of ALSDE policy
- Specific waiver requested of *Alabama Administrative Code* (AAC) statute

<table>
<thead>
<tr>
<th>Alabama Administrative Code (AAC) Statute Waiver Request</th>
<th>Impact of the Waiver</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Specify AAC Rule No., etc.)</td>
<td>(What will the waiver enable the school to do differently, etc?)</td>
</tr>
<tr>
<td>AAC 290-3-1-02-8 (a) Diploma Requirements</td>
<td>This waiver application would allow the system to award the Alabama High School Diploma without the traditional English, math, science and social studies curriculum requirements</td>
</tr>
<tr>
<td>AAC 290-3-1-02-8 (b-1)-2 Diploma Requirements – Credit Restrictions</td>
<td>This waiver would allow students who are a completer of a Career and Technical Education program to earn more than two embedded credits in math and/or science</td>
</tr>
<tr>
<td>AAC 290-3-1-02-2 (a-2) Length of School Day and School Term</td>
<td>This waiver would allow students to participate in a rigorous, relevant instructional environment through the Tuscaloosa County Virtual Learning Center. The traditional and non-traditional learning environments are built upon evidence of student learning outcomes as opposed to the daily number of hours of “actual teaching.” Daily instruction will be measured by successful completion of learning activities, mastery of content, and credits earned. In a virtual learning environment, it is difficult to accurately measure the specific number of hours of “actual teaching” that occurs each school day. We can, however, measure learning by successful completion of activities and examinations required to earn course credits.</td>
</tr>
<tr>
<td>AAC 290-3-1 Alabama Course of Study: Physical Education pages 27-33; 35-46</td>
<td>With approval from the Superintendent of the Tuscaloosa County School System and through the use of a district rubric and application, substitutions for some courses will be allowed for the Lifelong Individualized Fitness Education (LIFE) course or other physical education elective courses.</td>
</tr>
<tr>
<td>AAC 290-3-1-02-11 (c) Dual Enrollment – Postsecondary Institutions – Credits</td>
<td>This waiver would allow students participating in dual enrollment programs to earn one high school credit for any three+ semester credit hours or five+ quarter credit hours at the postsecondary level.</td>
</tr>
</tbody>
</table>
REQUIREMENTS THAT CANNOT BE WAIVED

- Those imposed by federal law
- Those related to the health and safety of students or employees
- Those imposed by ethics laws
- Those imposed by the *Alabama Child Protection Act of 1999, Title 16, Chapter 22A, Code of Alabama 1975*
- Those imposed by open records or open meetings laws
- Those related to financial or academic reporting or transparency
- Those designed to protect the civil rights of students or employees
- Those related to the state retirement system or state health insurance plan

NOT ALLOWABLE FOR WAIVER

- May not compensate an employee at an annual amount that is less than the amount the employee would otherwise be afforded through the State Minimum Salary Schedule
- May not involuntarily remove any rights or privileges acquired by any employee under the *Students First Act of 2011, Title 16, Chapter 24C, Code of Alabama 1975*
- May not deny any right or privilege granted to a new employee pursuant to the *Students First Act of 2011*
- May not authorize the formation of a charter school

Section 3- Vision and Needs Assessment

Creative Vision for the Project

1. What is the purpose and expected outcome of this project (include expected outcomes for students)?

- Allow "flexible" credit for career technical coursework/programs that fulfill math, science, social studies, elective, PE LIFE, and health requirements. "Flexible" credit provides personalized educational options for students in which they will identify, acquire, and demonstrate mastery in a given career technical content area to earn graduation credit. The career technical education electives offered within the district and within the Tuscaloosa City School System's Tuscaloosa Career and Technology Academy (TCTA) provide students with the opportunity to explore and gain skills relating to their career interests. If granted flexibility, these CTE electives would fulfill traditional course requirements. The correlation crosswalk overview is attached to the application.

- Allow students who are a completer of a Career and Technical Education program to earn more than two embedded credits in math and/or science.

- Allow credit flexibility for district pre-approved extracurricular opportunities (i.e. athletics, marching band, summer camps/programs, additional activities and other types of camps/programs, intense athletic training efforts such as Red Cross lifeguard certification) to count as the student's required Lifelong Individualized Fitness Education (LIFE) course or other physical education electives. Credits will be awarded based on crosswalks of the Alabama Course of Study standards and knowledge and skills required in the after school or summer camp/training/experience. A district rubric will be utilized to ensure cohesiveness and consistency for each camp and/or program submitted for elective approval. District approved extracurricular opportunities that meet course standards would be allowed to count as the Lifelong Individualized Fitness Education (LIFE) credit or for an elective credit (based on application information). For example, our system has students who devote a significant amount of time participating in dance, music, competitive swimming, equestrian teams and numerous other activities. Additionally, there are students who receive Red Cross training for lifeguard certification (which includes CPR certification) or other training required to serve as a camp counselor, etc. The district rubric and application are attached to the application.

- Request permission to offer students credit improvement opportunities. Students' participation in credit improvement may result in them exceeding the previously identified maximum ten credits. This would allow students who may need or want to take a course for additional credit an opportunity to do so. Students may attempt credit improvement through advancing credit, obtaining credit, recovering credit and/or repeating credit. Credit improvement may be attempted in math, English, science, social studies and/or elective classes. Students will be permitted to take courses through traditional and non-traditional scheduling year round (including summer months).
Advancing Credit - This program allows students who already know most of the standards taught in a particular course to prove mastery of course content by successfully completing a pretest and posttest in that subject. Students can attempt credit advancement in math, English, science, social studies, and elective classes. The tests used for credit advancement are either ACCESS pretests/posttests or locally approved computer-based exams. Students attempting credit advancement will take a pretest for the course. If the student earns at least an 80 on the pretest, then he/she will take a comprehensive posttest. If the student makes at least an 80 on the posttest, then he/she will receive credit for the course. If the student earns below an 80 on the pretest, then he/she is not eligible to take the posttest or to receive credit for the course. Once the student has passed the pretest, he/she will need to schedule an appointment to take the posttest. The posttest must be taken within one week of the results of the pretest being released to the students. Students are permitted to take the posttest on the same day as the pretest if an appointment to do so is available. The final grade earned on the pretest and the posttest will be averaged. The numeric average will serve as the final grade and will be posted directly to the transcript in a separate column indicating that the credit was earned through credit advancement. Credit advancement course are not weighted. There is not a limit on the number of credits that a student can earn through credit advancement. Students will be permitted to attempt credit advancement one time per course, per academic year.

Obtaining Credit - This program allows students who may need or want to take a course for additional credit. Students can attempt credit obtainment in math, English, science, social studies, and elective classes. Unlike credit advancement, students will take the course in its entirety; therefore, a pretest will not be administered. Credit obtainment is an alternative to the traditional approach to course completion. Students eligible for credit obtainment will be a transfer student whose credit in the required credit(s) is not due to failure of the course OR be a student who exhibits the desire to earn more than the traditional credits allotted in the school year. Using this program, students must take the entire course and the course is not weighted. Instruction will be provided non-traditionally. There is not a limit on the number of credits that a student can earn through this program.

Recovering Credit - In accordance with guidelines released by the Alabama State Department of Education, the Tuscaloosa County School System offers students who have received failing grades in courses that are required for graduation an opportunity to recover the lost credit through a standards-based approach that will target specific knowledge and skill deficits instead of requiring students to repeat the entire course. Students who qualify may apply to their school counselors to enroll in the program. In order to be accepted students will have an overall average of 40-59 in the course they seek to recover credit; not have lost credit due to violation of the non-compliance policy (excessive unexcused absences); will only complete the objectives from the course that caused them to fail. This prevents the student from having to redo the entire course and allows them to recover the lost credit in a much shorter time frame; complete an application signed by both students and parents/guardians; provide their own transportation to Credit Recovery classes when attending the after-school sessions. The maximum grade a student can receive in Credit Recovery is a 60. Transfer students from non-SACS accredited schools who fail the validation tests with a score of 40-59 for any core courses are also eligible for Credit Recovery.

Repeating Credit - This program is primarily for those students who made less than a 40 in the class they failed. Using this program, students must retake the entire course. Instruction may be provided traditionally or non-traditionally. Also, students who are eligible for Credit Recovery, but want to try and achieve higher than a 60 on their transcript for a course they failed may choose this option because students will be expected to complete all objectives from the course they failed.

- Tuscaloosa County Virtual Learning Center (TCVLC) will offer a county-wide distance learning program to students in middle and high school who need a home-based or non-traditional environment. Students that live within the attendance zone of the Tuscaloosa County School System may apply for enrollment in the Tuscaloosa County Virtual Learning Center. The center will be structured to effectively serve at-risk students who could have dropped out, are credit deficient, have been retained or recommended for retention, have never been proficient in requiredALSDE examinations, have attended multiple schools, or are simply interested in enrolling in an online learning environment. The district program description of the Tuscaloosa County Virtual Learning Center is attached to the application.

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- Allow students participating in dual enrollment programs to earn one high school credit for any three+ semester credit hours or five+ quarter credit hours at the postsecondary level. Providing a "one to one" opportunity would result in the following: increase dual enrollment participation; increase the number of students entering post-secondary institutions; increase the number of students receiving career and technical education certification; and increase the rate in which students are able to enter the workforce. Ultimately, providing this opportunity would allow high school students to receive credits toward their high school diploma and prepare students for higher-demand, higher-wage jobs (i.e. electrician, welder or mechanic).

2. Explain how the school's or school district's current data influenced the need for the project described in Question 1 above?

- The stringent requirements of the traditional 4X4 curriculum has stifled the ability to schedule students into the career and technical education electives. Flexible credit for career and technical education courses would allow more students an opportunity to participate in the career and technical education electives offered within the Tuscaloosa County School System and within the Tuscaloosa City School System's Tuscaloosa Career and Technology Academy (TCTA), resulting in more students regularly attending school and graduating from high school with career-ready skills and the experience to succeed in career readiness training or other post-secondary careers.

- In the Tuscaloosa County School System, opportunities for students to earn additional credit beyond those that may be earned through the traditional instructional day has only been provided to students who have had credit deficits. Credit improvement allows all students who may need or want to take a course for additional credit an opportunity to do so. Providing this opportunity will allow more students a chance to participate in career and technical education electives, advanced courses, dual enrollment, and an early graduation option. In addition, it will result in more students regularly attending school and graduating.

- The Tuscaloosa County School System consistently receives parent requests for flexible, but reasonable, modifications to the traditional high school structure for the purposes of better meeting students' individual learning needs. The graduation rate for the Tuscaloosa County School System is 77%; therefore, an alternate pathway toward graduation is needed.

- In the Tuscaloosa County School System, there are students with prohibitive medical issues or family hardships that prevent them from fully participating in traditional education and other students for whom traditional education can be perceived as a limitation of their learning and professional potential. Under the traditional school model, frequent medical appointments and prolonged absences cause some students with medical issues extreme difficulty in keeping standard course pace; other students fall behind in coursework because they are compelled to work long hours to help support their household. The convenience of anytime, anywhere learning and the flexibility of self-pacing would prove beneficial in allowing students to maintain high levels of learning while mitigating life’s challenges.

- The students from the Tuscaloosa County School System participate in numerous rigorous programs throughout the school year. Similarly, a significant amount of students participate in strenuous competitive trainings and programs such as dance, equestrian, swimming, lifeguard, etc. outside of the regular school day. By allowing activities such as dance, equestrian, swimming, lifeguard, etc. to count as a LIFE credit, students have more opportunities to participate in career and technical education electives, advanced courses and/or dual enrollment. In addition, it will result in more students regularly attending school and graduating.

- The Tuscaloosa County School System is committed to educate and empower all students to be college and career ready graduates – prepared to make positive contributions to our global society; therefore we evaluated our attendance, poverty, dropouts, retention, discipline, homelessness, graduation rate, and school status to assist in identifying the purpose and expected outcomes of our project.
Attendance and Percentage Free/Reduced Lunch

For 2013-2014 the average daily membership, average daily attendance and percentage average daily attendance taken from year-to-date 9th month report for each secondary school was:

<table>
<thead>
<tr>
<th>School</th>
<th>ADM</th>
<th>ADA</th>
<th>% ADA</th>
<th>% Free/Reduced Lunch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brookwood Middle</td>
<td>800.16</td>
<td>750.78</td>
<td>93.83%</td>
<td>55.06%</td>
</tr>
<tr>
<td>Collins-Riverside Middle</td>
<td>467.72</td>
<td>449.37</td>
<td>96.08%</td>
<td>68.80%</td>
</tr>
<tr>
<td>Davis-Emerson Middle</td>
<td>363.19</td>
<td>342.71</td>
<td>94.36%</td>
<td>86.43%</td>
</tr>
<tr>
<td>Duncanville Middle</td>
<td>491.85</td>
<td>472.44</td>
<td>96.05%</td>
<td>57.37%</td>
</tr>
<tr>
<td>Echols Middle</td>
<td>676.94</td>
<td>651.08</td>
<td>96.18%</td>
<td>47.30%</td>
</tr>
<tr>
<td>Hillcrest Middle</td>
<td>598.20</td>
<td>576.07</td>
<td>96.30%</td>
<td>52.20%</td>
</tr>
<tr>
<td>Northside Middle</td>
<td>363.08</td>
<td>348.10</td>
<td>95.87%</td>
<td>40.11%</td>
</tr>
<tr>
<td>Sipsey Valley Middle</td>
<td>388.87</td>
<td>370.81</td>
<td>95.35%</td>
<td>56.81%</td>
</tr>
<tr>
<td>Brookwood High</td>
<td>937.85</td>
<td>879.44</td>
<td>93.77%</td>
<td>53.43%</td>
</tr>
<tr>
<td>Hillcrest High</td>
<td>1,304.86</td>
<td>1,244.23</td>
<td>95.35%</td>
<td>43.29%</td>
</tr>
<tr>
<td>Holt High</td>
<td>395.41</td>
<td>363.89</td>
<td>92.03%</td>
<td>80.58%</td>
</tr>
<tr>
<td>Northside High</td>
<td>443.92</td>
<td>423.52</td>
<td>95.04%</td>
<td>37.84%</td>
</tr>
<tr>
<td>Sipsey Valley High</td>
<td>483.14</td>
<td>459.79</td>
<td>95.17%</td>
<td>51.04%</td>
</tr>
<tr>
<td>Tuscaloosa County High</td>
<td>1,466.54</td>
<td>1,381.63</td>
<td>94.21%</td>
<td>47.43%</td>
</tr>
</tbody>
</table>

Dropouts

During the 2013-2014 school year, 84 students dropped out of high school. The top three codes used to denote the reason for dropping out were other known reason (33 students), dislike of school (17 students) and academic difficulties (14 students). Of the 84 students who dropped out last year, 12 were classified as freshmen, 20 were classified as sophomores, 32 were classified as juniors and 20 were classified as seniors.

Retention

During the 2013-2014 school year, 221 students were retained at the middle school level and 379 students were retained at the high school level.

Discipline

During the 2013-2014 school year, there were 104 students who attended IMPACT; 177 student hearings conducted; 20 students who attended Project BETHEL; 24 students expelled; 23 students referred to an alternative class; and 25 students referred to G.R.A.D. Academy.

IMPACT (Intervention, Mediation, Parent Involvement, Achievement, Changing Tomorrow) – A collaboration between the Tuscaloosa County School System, the Tuscaloosa County District Attorney’s Office, and the Tuscaloosa County Sheriff’s Department has been formed to establish an early warning disciplinary program for the school/system. Members of the three agencies will collectively attempt to foster a positive, nurturing environment for the students and parents of this school system. The intent of the new early warning program will be to help decrease the number of disciplinary infractions and make a positive impact on the number of students dropping out of school. The following explains how the program is implemented. The Principal will send a letter home to the parents when a student is suspended from school the first time. The Superintendent will send a letter home to the parents when a student is suspended from school for the second time. When a student is suspended for the third time, a member of the sheriff’s office will deliver a letter to the parent(s) or guardian(s), and the Coordinator of Student Services for the Tuscaloosa County School System will set up the Early Warning Disciplinary Hearing at the Tuscaloosa Municipal Court.

G.R.A.D. Academy (Growth, Recovery, Achievement, Dedication) – The Tuscaloosa County School System attempts to provide a positive, rewarding, educational experience for all of our students. Sometimes, however, the general program is simply inappropriate or inadequate. The G.R.A.D. Academy exists to provide an optimal educational environment for students whose unique situation and/or needs are not fully addressed within the constraints of the traditional program.

G.R.A.D. Academy at Project BETHEL - An alternate learning school is necessary to assign students who have committed level III offenses instead of expelling them from TCSS campuses permanently. These types of school settings...
may vary from other schools in such areas as teaching methods, hours, curriculum, or sites, and they are intended to meet particular learning needs. They can also serve at-risk students who have committed repeated Level I and Level II offenses as well. For the majority of students, the goal is to return to the regular public school. When possible, the district has partnered with Bethel to house these identified students. Through the expansion of G.R.A.D. Academy, students from the Tuscaloosa County School System shall receive full credit for work done in core academic classes. The Tuscaloosa County School System will provide access to our virtual curriculum exclusively to our students attending Project BETHEL.

McKinney-Vento
During the 2013-2014 school year, 170 students were identified as McKinney-Vento.

Graduation Rate
Even though, the Tuscaloosa County School System has seen an increase in the system’s graduation rate by 9% and an increase in our success rate by 11% over the past few years, we currently still have a graduation rate and success rate that is lower than the state’s rate. The graduation rate for the cohort of 2013 was 77% and the success rate was 88%.

Failing, Priority and Focus Schools
Additionally, one of our middle schools is identified as a "failing" school according to the requirements established in the Alabama Accountability Act, one of our high schools is identified as a "priority" school and there are two high schools and two middle schools are identified as "focus" schools. As a result, these innovative approaches must be established to help all of our schools increase student achievement and continue to increase graduation rates.

3. How is this project linked to Alabama’s PLAN 2020? How is this project linked to the school’s or district’s strategic plan?
The Tuscaloosa County School System is committed to educate and empower all students to be college and career ready graduates — prepared to make positive contributions to our global society. The Tuscaloosa County School System believes
• High expectations are necessary to achieve goals and expand opportunities for all.
• Education is a shared responsibility that positively impacts the quality of life.
• Equity, fairness, accountability, and fiscal responsibility are foundations of our decision-making.
• Safe, well-equipped, student-centered schools support student success.
• Diversity and individual learning needs are respected, included, and valued.

PLAN 2020 grants school systems "flexibility to innovate and create 21st century learning environments to meet the individual and collective needs of their students." With this flexibility, the Tuscaloosa County School System will support students as they take more career technical coursework and be afforded innovative and relevant opportunities for acceleration and/or early graduation.

4. How is the school’s or district’s project connected to best practice and current research in reference to raising student achievement and preparing students to be college- and career-ready?

"Differentiating instruction for all learners" is a core theme of Alabama PLAN 2020. The crucial need for the United States today is an educational system that empowers students and develops creativity and imagination, not one focused on standardization and conformity. A new system of learning that is differentiated and that connects to student passions and strengths must be made a reality. Teaching and learning needs to transform to something yet undefined (Sheninger, 2014).

The Tuscaloosa County School System has devoted the past two years to providing teachers and administrators with purposeful professional development (i.e. strategic teaching, rigor in the classroom with an emphasis on formative assessments) and instructional coaching support to help teachers and students transition to the full implementation of Alabama’s College and Career Ready Standards. Through the implementation of these standards, students are able to receive basic foundational skills needed to succeed in college and careers. For the 2014-2015 school year, the Academic Scholars Program is being implemented in 6th grade. The program will have an emphasis on project-based learning and STEAM. Over the next three years, the program will be gradually phased into all grades at the middle school level. The Academic Scholars Program will focus on student-driven, authentic projects in which critical thinking, problem solving and collaboration skills will be intertwined within each subject area. To succeed in the new global economy, students need to be able to think like entrepreneurs and be resourceful, flexible, creative, and think globally (Zhano, 2012).
Schools and systems must implement individualized instruction that support student personal interests and professional goals. This flexibility request supports the innovative approach the Tuscaloosa County School System is seeking through this application. Educators must improve their educational programs while decreasing the drop-out rates through the implementation of rigorous and relevant curriculum that prepares them for college and career readiness. Unfortunately, many students are leaving school to learn outside of the traditional school setting. It is about providing learners with the knowledge, skills, and confidence to succeed in college, careers, and jobs that have not been created yet (Sheninger, 2014).

We believe that our proposed innovative approach would directly increase student achievement and prepare students to be college-and career-ready because of the following:

- Students will no longer be restricted from exploring various career interests, from being limited to one high school pathway (AP, career technical, athletics, etc.) in isolation, or from completing a full technical course pathway if "flexible" credit is awarded for some of the traditional high school courses that have the same standards being taught within the course career and technical education electives offered within the Tuscaloosa County School System and within the Tuscaloosa City School System's Tuscaloosa Career and Technology Academy.
- CTE concentrators or completers will finish coursework that provides them with certification needed for careers or skills needed to go directly into college or career following high school. This will allow students to bypass post-secondary technical training and immediately enter the job force after graduating high school.
- By allowing flexibility in awarding elective credits, students will have opportunities to take additional coursework based on their interests and college/career preparatory needs.

5. How will this project be supported and monitored for implementation by the district?

This project will be supported and monitored in multiple ways. They include the following:

- Students will meet with counselors and teachers to develop comprehensive four-year plans that are designed according to students’ college and career plans.
- Extracurricular activities that potentially meet elective coursework will be evaluated and scored via an established rubric aligned to the physical education course of study standards.
- Local schools and district curriculum and instruction team members will analyze data from formative and summative assessments and encourage students making benchmark scores to seek accelerated instructional paths.
- Curriculum team members will work with local school counselors to annually audit transcripts to ensure consistency and accuracy for credits.
- Number of career technical concentrators and completers will be analyzed each year and compared to previous years.
- Number of students participating in dual enrollment will be analyzed each year and compared to previous years.
- Data meetings to discuss student progress (e.g. formative and summative assessments, attendance, discipline)
- Administrative Academy for principals and assistant principals discussing rigor (e.g. formative assessments, instructional rounds)
- Data cluster meetings for vertical teaming conversations
- Collaborative period in all high schools for professional development within subject content
- High School Early Exit and Credit Improvement - advancing credit, obtaining credit, recovering credit, repeating credit, and grade recovery.
- A+NYWHERE (A+) training for principals, assistant principals, A+ site administrators, English, math, science, social studies and special education department chairpersons, PST chairpersons, homebound teachers, G.R.A.D. Academy teachers, Alternative Program teachers, Project B.E.T.H.E.L. teachers and Central Office personnel.
- Consulting and visiting other school systems and states to learn more ways to continually enhance what we do.
**Goals:**
To prepare all students of the Tuscaloosa County School System for college and career readiness through innovative course opportunities and programs that provide rigorous and relevant coursework related to personal interests and professional goals.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Activities</th>
<th>Personnel</th>
<th>Timeline</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the measurable objectives that will be used to determine success in achieving these goals (Must be specific, measurable, attainable, relevant, and timely goals (SMART))</td>
<td>Develop activities for each objective that are: creative and innovative; impact student success; allow for greater flexibility; change the way the school(s)/school system currently operates</td>
<td>Indicate the name and title of personnel that will be responsible for the activities</td>
<td>Identify the timeline for the activities (include month/year)</td>
<td>Indicate budget requirements and funding source (include formulas used to derive totals in budget sections, e.g., 3 subs @$143/day=total)</td>
</tr>
</tbody>
</table>

The number of completers in career technical programs will increase by 0.5% annually.

The number of students in advanced coursework (AP) and/or participation in dual enrollment will increase by a minimum of 2% annually.

To increase local school and system graduation rates by a minimum of 2% annually.

Students will receive "Flexible" Credit for technical coursework that meets learning objectives connected to traditional high school courses (outlined in correlation crosswalk charts attached to the application).

Students will be able to demonstrate mastery of course content by taking ACCESS Acceleration/Distance Learning or A+NYWHERE Learning end-of-course assessments prior to attempting the course. Mastery of content will be illustrated through an 80 or higher on the A+NYWHERE Learning program or ACCESS assessments.

Students will receive Flexible Credit for extracurricular activities that meet learning objectives connected to elective coursework based on the district rubric.

Students who want to take an additional course for credit will be allowed to do so.

Students will be able to earn one high school credit for one college course (three+ semester credit hours or five+ quarter hours).

Dr. Deron Cameron
Dr. Amanda Cassity
Dr. Walter Davie
Mr. Dennis Duncan
Mrs. Karla Griffin
Mrs. Gwen Harper

Provide community awareness of options upon approval of Innovation Application
Train counselors and registrars on the flexibility options for credits
Provide timeline for students to take ACT Quality Core for acceleration & schedule based.
Section 5- Project Evaluation and Sustainability

1. How will you evaluate and report the impact this innovation project has on increasing student success and/or other stated goals and objectives?

The impact of this innovation project will be evaluated and monitored through:
- The number of students who are concentrators or completers in career technical programs
- The number of students who take courses through dual enrollment
- The number of students who enroll in Advanced Placement coursework
- The decreased number of monthly withdrawal/exit interviews for students who desire to dropout
- The increased attendance rates at the local schools
- The decreased local school suspension rates
- The decreased percentage of student course failures
- The increased graduation rates of all high school in the Tuscaloosa County School System
- The number of students who have the opportunity to graduate early if they so choose
- The number of students earning industry credentials
- The increased number of students who have been expelled completing course work and staying on track to graduate

2. How will this innovation project be sustained?

This innovation project will be sustained with continued support to the local school from the central office staff. This plan goes into effect beginning with the 2014-2015 school year. It will allow students to earn graduation credit through one of the following options:
- Successfully completing coursework in a traditional or non-traditional manner
- Prove mastery of course content by successfully completing a pretest and posttest in that subject.
- Pursuing an educational option and/or an individually approved option
- Any combination of the above options

Through multiple partnerships with outside agencies including the Tuscaloosa City School System, The University of Alabama, Shelton State Community College, Bevill State Community College, Project BETHEL (a partnership with Bethel Baptist Church) and a dedicated technical program and administrative staffs, we will have multiple avenues for support.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Brookwood High School
School District: Tuscaloosa County School System

Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):

*Meeting Date(s):
- August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees: 232 community members: 319 parents/guardians)
- September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
- September 10, 2013 – Community Forum – Brookwood High School
- November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
- January 13, 2014 – Board Meeting – Approval of the Tuscaloosa County School System 2014-2019 Strategic Plan
- March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
- June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
- June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
- July 22, 23, 2014 – Administrative Conference – Central Office
- August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
- August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Alice Spritzer
Signature: Alice Spritzer
Name: Jessica Brandon
Signature: Jessica Brandon
Name: Robbie Bailey
Signature: Robbie Bailey

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Katherine Nelson
Signature: Katherine Nelson
Name: Jennifer Reynolds
Signature: Jennifer Reynolds
Name: Kaye Miller
Signature: Kaye Miller

Record of Public Discussion and Input

District and School Representatives:
Name: Todd Fitzgerald
Signature: Todd Fitzgerald
Name: Debra Canida
Signature: Debra Canida
Name: Gwen Harper
Signature: Gwen Harper

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Hillcrest High School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):

*Meeting Date(s):

• August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
• September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
• September 12, 2013 – Community Forum – Hillcrest High School
• November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
• January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
• March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
• June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
• June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
• July 22-23, 2014 – Administrative Conference – Central Office
• August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
• August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Sherry Jones
Name: Jenny Meeks
Name: Stacey Roberts

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Dr. Cay Strickland
Name: Sheree Kizziah
Name: Brad Armstrong

Record of Public Discussion and Input

District and School Representatives:
Name: Allison Meyers
Name: Jeff Hinton
Name: Steven Sims

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Holt High School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
  - August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  - September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  - November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  - January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  - March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  - June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  - June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
  - July 22-23, 2014 – Administrative Conference – Central Office
  - August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  - August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Amanda Bearden  
Name: Ronald Strozier  
Name: Cheryl Castleberry  

We certify that this application/plan is supported by the school's PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Leann Sullivan  
Name: Lena Lindsey  
Name: Lisa Lockhart

Record of Public Discussion and Input

District and School Representatives:
Name: Rachel McDaniel  
Name: Deron Cameron  
Name: Gwen Harper

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Northside High School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
  • August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  • September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  • September 19, 2013 – Community Forum – Northside High School
  • November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  • January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  • March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  • June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  • June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
  • July 22-23, 2014 – Administrative Conference – Central Office
  • August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  • August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Teresa Cooper
Name: Robin Kirkpatrick
Name: Greg Long

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Cynthia A. Long
Name: Anthony D. Dunn
Name: Jacqueline S. Hudgens

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Sipsey Valley High School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
  • August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  • September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  • October 8, 2013 – Community Forum – Sipsey Valley High School
  • November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  • January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  • March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  • June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  • June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
  • July 22-23, 2014 – Administrative Conference – Central Office
  • August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  • August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Mona Sellers
Name: Stephanie Marshall
Name: Myra Parsons

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Deborah Cameron
Name: Kellye Harris
Name: Celeste Barnes

Record of Public Discussion and Input

District and School Representatives:
Name: Dennis J. Alvarez
Name: Steven Young
Name: Jacqueline McNealy

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Tuscaloosa County High School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
  - August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  - September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  - September 26, 2013 – Community Forum – Tuscaloosa County High School
  - November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  - January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  - March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  - June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  - June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
  - July 22-23, 2014 – Administrative Conference – Central Office
  - August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  - August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Debra Turner
Signature:
Name: Melanie Hogue
Signature:
Name: Dana Dunn
Signature:

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Julia Fox
Signature:
Name: Cynthia Simpson
Signature:
Name: Tracy Clark
Signature:

Record of Public Discussion and Input

District and School Representatives:
Name: Mark Frank
Signature:
Name: Brenda King
Signature:
Name: Daniel Dickens
Signature:

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Brookwood Middle School  
School District: Tuscaloosa County School System  
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):  
*Meeting Date(s):  
  - August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)  
  - September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums  
  - September 10, 2013 – Community Forum – Brookwood High School  
  - November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)  
  - January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan  
  - March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools  
  - June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center  
  - June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)  
  - July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers  
  - July 22-23, 2014 – Administrative Conference – Central Office  
  - August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals  
  - August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders  

Parent Representatives:  
Name: Agay Ward  
Signature:  
Name: Donna G. Riker  
Signature:  
Name: Cathy Rutledge  
Signature:  

We certify that this application/plan is supported by the school's PTA/PTO.

Continuous Improvement Leadership Team Representatives:  
Name: Kelly Brown  
Signature:  
Name: Scott Branch  
Signature:  
Name: Chasidy White  
Signature:  

Record of Public Discussion and Input

District and School Representatives:  
Name: Becky Brown  
Signature:  
Name: Annette Williams  
Signature:  
Name: Robert P. Marshall, III  
Signature:  

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Collins-Riverside Middle School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
  - August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  - September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  - September 26, 2013 – Community Forum – Tuscaloosa County High School
  - November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  - January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  - March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  - June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  - June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
  - July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers
  - July 22-23, 2014 – Administrative Conference – Central Office
  - August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  - August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Woodrow Washington
Name: Beth Jones
Name: Jennifer Swindle

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Peggy Grant
Name: Reba Box
Name: Jerry Boatwright

Record of Public Discussion and Input

District and School Representatives:
Name: Bryant Williams
Name: Gwen Harper
Name: Deron Cameron

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Davis-Emerson Middle School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
- August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
- September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
- September 17, 2013 – Community Forum – Holt High School
- November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
- January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
- June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
- June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
- July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers
- July 22-23, 2014 – Administrative Conference – Central Office
- August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
- August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Danielle M. Jones
Signature: 
Name: Katie Huff
Signature: 
Name: Charles Drucker
Signature: 

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Nakiaia Bonner
Signature: 
Name: Beth Lee
Signature: 
Name: Deborah Parker
Signature: 

Record of Public Discussion and Input

District and School Representatives:
Name: Malcom B. Musson
Signature: 
Name: Gwen Harter
Signature: 
Name: Deron Camper
Signature: 

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Duncanville Middle School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
- August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
- September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
- September 12, 2013 – Community Forum – Hillcrest High School
- November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
- January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
- March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
- June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
- June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
- July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers
- July 22-23, 2014 – Administrative Conference – Central Office
- August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
- August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Darrell Wlliam
Signature: [Signature]
Name: CJniss Rhofes
Signature: [Signature]
Name: Mark Nelson
Signature: [Signature]

We certify that this application/plan is supported by the school's PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Darlene A. Tucker
Signature: [Signature]
Name: Traci Primm
Signature: [Signature]
Name: Xan C. Hartley
Signature: [Signature]

Record of Public Discussion and Input

District and School Representatives:
Name: Kaye Bidawoy
Signature: [Signature]
Name: Michael Reece
Signature: [Signature]
Name: Autumn M. Franks
Signature: [Signature]

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Echols Middle School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):

*Meeting Date(s):
- August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
- September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
- September 26, 2013 – Community Forum – Tuscaloosa County High School
- November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
- January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
- March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
- June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
- June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
- July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers
- July 22-23, 2014 – Administrative Conference – Central Office
- August 19, 2014 – A+ANYWHERE Training for Principals and Assistant Principals
- August 21, 2014 – A+ANYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Jana Coff
Name: __________________________
Name: __________________________
Signature: ______________________
Signature: ______________________
Signature: ______________________

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Jonathan Foster
Name: Enn Foster
Name: Mark Patterson
Signature: ______________________
Signature: ______________________
Signature: ______________________

Record of Public Discussion and Input

District and School Representatives:
Name: Jason Stapp
Name: Laurie Cope Land
Name: Derek Coleman
Signature: ______________________
Signature: ______________________
Signature: ______________________

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Hillcrest Middle School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
  • August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  • September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  • September 12, 2013 – Community Forum – Hillcrest High School
  • November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  • January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  • March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  • June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  • June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Rice)
  • July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers
  • July 22-23, 2014 – Administrative Conference – Central Office
  • August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  • August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Jamie Jones
Name: Kristie Wykes
Name: Amber Hobson

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Robin Spencer-Vanderford
Name: Kortney Tate
Name: Carrie Jo Powell

Record of Public Discussion and Input

District and School Representatives:
Name: CKinsha Hobbs
Name: Gwen Harper
Name: Deron Cameron

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School: Northside Middle School
School District: Tuscaloosa County School System
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):
*Meeting Date(s):
  □ August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  □ September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  □ September 19, 2013 – Community Forum – Northside High School
  □ November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  □ January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  □ March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  □ June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  □ June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Rice)
  □ July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers
  □ July 22-23, 2014 – Administrative Conference – Central Office
  □ August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  □ August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name: Lydia Wheelus
Name: Theresa Perry
Name: Elaine Mathis

We certify that this application/plan is supported by the school’s PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name: Larry Ash
Name: Jackie McMillan
Name: Deborah Miller

Record of Public Discussion and Input

District and School Representatives:
Name: Lisa Blaich
Name: Betsy Roby
Name: Heaven Birkley

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Record of Commitment

Use this form to report staff, parent, and public commitment regarding the innovation application and plan. Use a separate form for each school.

School:  Sipsey Valley Middle School  
School District:  Tuscaloosa County School System  
Notice of Meeting(s) (Date provided to faculty, department, parents, community, etc.):  
*Meeting Date(s):
  - August-September, 2013 – Strategic Plan Online Surveys – All Schools – 775 participants (224 employees; 232 community members; 319 parents/guardians)
  - September 9, 2013 – Board Meeting – Discussions about new strategic plan and community input/forums
  - October 8, 2013 – Community Forum – Sipsey Valley High School
  - November 5, 2013 – Board Meeting – First reading of the 2014-2019 Strategic Plan (draft)
  - January 13, 2014 – Board Meeting – Approval of the 2014-2019 Strategic Plan
  - March 10, 2014 – Board Meeting – Academic Scholars Program/STEAM – Middle Schools
  - June 16, 2014 – Board Meeting – Discussions about Tuscaloosa County Virtual Learning Center
  - June 17, 2014 – State of Our Schools Address (Dr. Swinford, Dr. McKendrick, and Dr. Bice)
  - July 8-9, 2014 – STEAM Training – Central Office – All 6th grade teachers
  - July 22-23, 2014 – Administrative Conference – Central Office
  - August 19, 2014 – A+NYWHERE Training for Principals and Assistant Principals
  - August 21, 2014 – A+NYWHERE Training for Middle and High School Site Leaders

Parent Representatives:
Name:  Scott Townsend  
Signature:  

Name:  Jeri Martin  
Signature:  

Name:  Mary Goodloe Farr  
Signature:  

We certify that this application/plan is supported by the school's PTA/PTO.

Continuous Improvement Leadership Team Representatives:
Name:  Andrea Baker  
Signature:  

Name:  Burton Anderson  
Signature:  

Name:  Walt White  
Signature:  

Record of Public Discussion and Input

District and School Representatives:
Name:  Frank Kelly  
Signature:  

Name:  Parketta Brandon  
Signature:  

Name:  Jacqueline McNalley  
Signature:  

We certify that multiple opportunities were provided for public discussion and input of this plan.

*Record of sign-in sheets and input from various groups and meetings should be kept at the district level.
Local Education Agency Report of Support or Concerns

Use this form to report the school or district and superintendent support or concerns, or both, about the innovation to the principal and faculty. Use a separate form for each school.

School: All listed in application
School District: Tuscaloosa County School System
Date of School/Department/Subdivision Receipt of Application: ____________________________
Date of Regularly Scheduled Board of Education Meeting: ____________________________

Local School Board of Education Members:

Name of President: ____________________________ Signature: ____________________________
Name Vice President: ____________________________ Signature: ____________________________
Name of Member: ____________________________ Signature: ____________________________
Name of Member: ____________________________ Signature: ____________________________
Name of Member: ____________________________ Signature: ____________________________
Name of Member: ____________________________ Signature: ____________________________
Name of Member: ____________________________ Signature: ____________________________

Support:
Full support from faculty and staff

Concerns:
None stated during the discussions

(Report of the Local Education Agency must be forwarded to school/school district for submission to Alabama State Board of Education with the application/plan).
Community Partner Support

Use this form to document community organization/agency support and partnership for the innovation plan/project. Use a separate form for each community partner.

School/Schools: All listed in application

School District: Tuscaloosa County School System

Date(s) of School/School District/Community Partner Dialogues: ________________________________

Name of Community Organization/Agency: Tuscaloosa City School System

Contact Person: Sandra Aldridge, Ed.D.

Contact Person E-mail Address: saldrige@tusc.k12.al.us

Contact Person Telephone Number: 205.759.3537 or 205.759.3511

Contact Person Address: 1210 21st Avenue Tuscaloosa, Al. 35401

Explain the community organization’s/agency’s commitment to the Plan/Project:

The Curriculum & Instruction Staff members will be available to advise TCSS curriculum team members of program related supports related to the flexibility waiver. TCSS Curriculum and Instruction Team will serve as technical contacts for questions in a timely manner. Tuscaloosa City School will plan with TCSS as appropriate for joint planning.

List the resources and contributions (not monetary) that the organization/agency is making to this Plan/Project:

Tuscaloosa City Schools technical assistance for flexibility waiver implementation as requested.

Tuscaloosa City School system will share imperative ideas for future flexibility proposals for consideration of possible joint requests.

Agency Representative (Name)

Tuscaloosa City Schools

Title: Interim Assistant Superintendent for Curriculum & Instruction & Federal Programs Director

Signature: [Signature]

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Community Partner Support

Use this form to document community organization/agency support and partnership for the Innovation plan/project. Use a separate form for each community partner.

School/Schools: All listed in the application

School District: Tuscaloosa County School System

Date(s) of School/School District/Community Partner Dialogues: ________________________________

Name of Community Organization/Agency: The University of Alabama

Contact Person: Cheree Causey

Contact Person E-mail Address: ccausey@ccs.ua.edu

Contact Person Telephone Number: 205.348.7083

Contact Person Address: P.O. Box 870365, Tuscaloosa, AL 35401

Explain the community organization's/agency's commitment to the Plan/Project:

The University of Alabama’s UA Early College program provides high school students the opportunity to enroll in college-level classes prior to their graduation. Students may participate in online courses, campus-based summer offerings, and other campus courses with approval from the home high school. UA is committed to providing dual enrollment opportunities for students with Tuscaloosa County School system and will partner with school system officials to meet the needs of their students.

List the resources and contributions (not monetary) that the organization/agency is making to this Plan/Project:

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Agency Representative (Name)

Dr. Joe Benson

Title:
Provost, The University of Alabama

Signature: _____________________________
Community Partner Support

Use this form to document community organization/agency support and partnership for the innovation plan/project. Use a separate form for each community partner.

School/Schools: All listed in the application

School District: Tuscaloosa County School System

Date(s) of School/School District/Community Partner Dialogues: ________________________________

________________________________________
Name of Community Organization/Agency: Shelton State Community College

Contact Person: Amanda D. Harbison

Contact Person Email Address: aharbison@sheltonstate.edu

Contact Person Telephone Number: 205 394 2694

Contact Person Address: 9600 Old Greensboro Road Tuscaloosa, AL 35405

Explain the community organization's/agency's commitment to the Plan/Project:
Schedule dual enrollment classes to provide career tech courses and academic courses to students in the Tuscaloosa County School System.

List the resources and contributions (not monetary) that the organization/agency is making to this Plan/Project:
Instructors will be provided on our campus to teach scheduled and requested classes.

Agency Representative (Name)

________________________________________
Title: President - SS CCC

Signature: Andrew M. Maynard
Community Partner Support

Use this form to document community organization/agency support and partnership for the innovation plan/project. Use a separate form for each community partner.

School/Schools: All listed in application

School District: Tuscaloosa County School System

Date(s) of School/School District/Community Partner Dialogues: October 13, 2014

Name of Community Organization/Agency: Bevill State Community College

Contact Person: Mr. Max Weaver, Dean of Workforce Development

Contact Person E-mail Address: max@bscc.edu

Contact Person Telephone Number: 205-932-3221, ext. 5133

Contact Person Address: 2631 Temple Avenue North, Fayette, AL 35555

Explain the community organization's/agency's commitment to the Plan/Project:

Schedule Dual Enrollment classes to provide career tech course offerings to Northside High School students.

List the resources and contributions (not monetary) that the organization/agency is making to this Plan/Project:

Instructors will be provided to teach scheduled and requested classes. Admissions and financial staff will assist students in scholarship applications and with the admissions process.

Agency Representative (Name):

Thomas M. Huebner, Jr., PhD

Title:
Interim President

Signature:
Community Partner Support

Use this form to document community organization/agency support and partnership for the innovation plan/project. Use a separate form for each community partner.

School/Schools: All listed in application

School District: Tuscaloosa County School System

Date(s) of School/School District/Community Partner Dialogues: October 1, 2014 - September 30, 201

Name of Community Organization/Agency: Project BETHEL (Bethel Community Outreach, Inc.)

Contact Person: Rush Howard

Contact Person E-mail Address: musicmin 06 e yahoo.com

Contact Person Telephone Number: 205 758-6844

Contact Person Address: 3003 - 25th Street, Tuscaloosa, AL 35401

Explain the community organization's/agency's commitment to the Plan/Project:

The Tuscaloosa County School System has partnered with Bethel to provide an alternate learning environment for students who have committed class III offenses.

List the resources and contributions (not monetary) that the organization/agency is making to this Plan/Project:

Staff

Agency Representative (Name)

Tommy Woods

Title: Executive Director

Signature: Tommy Woods
<table>
<thead>
<tr>
<th>LIFE</th>
<th>Introduction to Fire Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.E.</td>
<td>Principles of Public Service</td>
</tr>
<tr>
<td>Health</td>
<td>Emergency Medical Services</td>
</tr>
<tr>
<td>Physics</td>
<td>Introduction to Robotics</td>
</tr>
<tr>
<td>Physical Science</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Algebraic Connections</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Graphic Arts/Arts and Design</td>
<td>Electrical Technologies I</td>
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<td>Electrical Technologies I</td>
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<tr>
<td>Economics</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Life Science/Ecology</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Forensic Science</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Human Anatomy and Physiology</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Physical Science</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Geometry</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Physics</td>
<td>Electrical Technologies I</td>
</tr>
<tr>
<td>Traditional Course</td>
<td>Electrical Technologies I</td>
</tr>
</tbody>
</table>

**Correlation Crosswalk Documents**

**TSS and/or TCA Course**
<table>
<thead>
<tr>
<th>TCSS and/or TCTA Course</th>
<th>Traditional Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLTW Principles of Engineering</td>
<td>Physics</td>
</tr>
<tr>
<td></td>
<td>Geometry</td>
</tr>
<tr>
<td></td>
<td>Physical Science</td>
</tr>
</tbody>
</table>
# Principles of Engineering (PLTW) to Physics Correlation

<table>
<thead>
<tr>
<th>Alabama Course Of Study-Physics (Objectives)</th>
<th>Principles of Engineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Explain linear, uniform circular, and projectile motions using one- and two-dimensional vectors. • Explaining the significance of slope and area under a curve when graphing distance-time or velocity-time data Example: slope and area of a velocity-time curve giving acceleration and distance traveled • Describing forces that act on an object Example: drawing a free-body diagram showing all forces acting on an object and resultant effects of friction, gravity, and normal force on an object sliding down an inclined plane</td>
<td>Lesson 2.1 Statics Lesson 2.2 Material Properties Lesson 2.3 Material Testing Lesson 2.4 Design Problem – Materials and Structures</td>
</tr>
<tr>
<td>2.) Define the law of conservation of momentum. • Calculating the momentum of a single object • Calculating moments of two objects before and after collision in one-dimensional motion</td>
<td>Lesson 4.1 Statics Lesson 4.2 Kinematics</td>
</tr>
<tr>
<td>3.) Explain planetary motion and navigation in space in terms of Kepler's and Newton's laws.</td>
<td>Lesson 2.1 Statics Lesson 2.2 Material Properties Lesson 4.2 Kinematics</td>
</tr>
</tbody>
</table>
4.) Describe quantitative relationships for velocity, acceleration, force, work, power, potential energy, and kinetic energy.

<table>
<thead>
<tr>
<th>Lesson 1.1 Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson 1.2 Energy Sources</td>
</tr>
<tr>
<td>Lesson 1.3 Energy Applications</td>
</tr>
<tr>
<td>Lesson 1.4 Design Problem – Energy and Power</td>
</tr>
<tr>
<td>Lesson 2.1 Statics</td>
</tr>
<tr>
<td>Lesson 2.2 Material Properties</td>
</tr>
<tr>
<td>Lesson 2.3 Material Testing</td>
</tr>
<tr>
<td>Lesson 2.4 Design Problem – Materials and Structures</td>
</tr>
<tr>
<td>Lesson 3.2 Fluid Power</td>
</tr>
<tr>
<td>Lesson 3.3 Design Problem – Control Systems</td>
</tr>
<tr>
<td>Lesson 4.2 Kinematics</td>
</tr>
</tbody>
</table>

5.) Explain the concept of entropy as it relates to heating and cooling, using the laws of thermodynamics.

- Using qualitative and quantitative methods to show the relationship between changes in heat energy and changes in temperature.

<table>
<thead>
<tr>
<th>Lesson 1.2 Energy Sources</th>
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<td>Lesson 1.3 Energy Applications</td>
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<tr>
<td>Lesson 1.4 Design Problem – Energy and Power</td>
</tr>
</tbody>
</table>

6.) Describe wave behavior in terms of reflection, refraction, diffraction, constructive and destructive wave interference, and the Doppler effect.

- Explaining reasons for differences in speed, frequency, and wavelength of a propagating wave in varying materials.
- Describing uses of different components of the electromagnetic spectrum, including radio waves, microwaves, infrared radiation, visible light, ultraviolet radiation, X rays, and gamma radiation.
- Demonstrating particle and wave duality.
- Describing the change of wave speed in different media.

<table>
<thead>
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<th>Lesson 1.3 Energy Applications</th>
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<tr>
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<tr>
<td>Lesson 3.3 Design Problem – Control Systems</td>
</tr>
</tbody>
</table>
7.) Describe properties of reflection, refraction, and diffraction.

   Examples: tracing the path of a reflected light ray, predicting the formation of reflected images through tracing of rays

   • Demonstrating the path of light through mirrors, lenses, and prisms
     Example: tracing the path of a refracted light ray through prisms using Snell's law

   • Describing the effect of filters and polarization on the transmission of light

   Lesson 1.3 Energy Applications
   Lesson 1.4 Design Problem – Energy and Power

8.) Summarize similarities in the calculation of electrical, magnetic, and gravitational forces between objects.

   • Determining the force on charged particles using Coulomb's law

   Lesson 1.2 Energy Sources
   Lesson 1.3 Energy Applications
   Lesson 1.4 Design Problem – Energy and Power

9.) Describe quantitative relationships among charge, current, electrical potential energy, potential difference, resistance, and electrical power for simple series, parallel, or combination direct current (DC) circuits.

   Lesson 1.2 Energy Sources
   Lesson 1.4 Design Problem – Energy and Power
Principles Of Engineering (POE) Course Description

Principles Of Engineering (POE) is a high school-level survey course of engineering. The course exposes students to some of the major concepts that they will encounter in a postsecondary engineering course of study. Students have an opportunity to investigate engineering and high tech career POE gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. Used in combination with a teaming approach, APPB learning challenges students to continually hone their interpersonal skills, creative abilities, and problem solving skills based upon engineering concepts. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education.

To be successful in POE, students should be concurrently enrolled in college preparatory mathematics and science. Students will employ engineering and scientific concepts in the solution of engineering design problems. Students will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges. Students will also learn how to document their work and communicate their solutions to their peers and members of the professional community.

Principles Of Engineering is one of the foundation courses in the Project Lead The Way high school engineering program. The course applies and concurrently develops secondary level knowledge and skills in mathematics, science, and technology.

The course of study includes:

- Mechanisms
- Energy Sources
- Energy Applications
- Machine Control
- Fluid Power
- Statics
- Material Properties
- Material Testing
- Statistics
- Kinematics
Principles Of Engineering (POE) Detailed Outline

Unit 1: Energy and Power (49 days)

Lesson 1.1 Mechanisms (15 days)

Understandings:

1. Engineers and engineering technologists apply math, science, and discipline-specific skills to solve problems.

2. Engineering and engineering technology careers offer creative job opportunities for individuals with a wide variety of backgrounds and goals.

3. Technical communication can be accomplished in oral, written, and visual forms and must be organized in a clear and concise manner.

4. Most mechanisms are composed of gears, sprockets, pulley systems, and simple machines.

5. Mechanisms are used to redirect energy within a system by manipulating force, speed, and distance.

6. Mechanical advantage ratios mathematically evaluate input work versus output work of mechanisms.

Knowledge and Skills

*It is expected that students will:*

- Differentiate between engineering and engineering technology.
- Conduct a professional interview and reflect on it in writing.
- Identify and differentiate among different engineering disciplines.
- Measure forces and distances related to mechanisms.
- Distinguish between the six simple machines, their attributes, and components.
- Calculate mechanical advantage and drive ratios of mechanisms.
- Design, create, and test gear, pulley, and sprocket systems.
- Calculate work and power in mechanical systems.
- Determine efficiency in a mechanical system.
- Design, create, test, and evaluate a compound machine design.
Lesson 1.2 Energy Sources (11 days)

Understandings:

1. Energy source classifications include nonrenewable, renewable, and inexhaustible.
2. Energy source processes include harnessing, storing, transporting, and converting.
3. Energy often needs to be converted from one form to another to meet the needs of a given system.
4. An understanding of work, energy, and power is required to determine system efficiency.
5. An understanding of the basics of electricity requires the understanding of three fundamental Understandings of voltage, current, and resistance.
6. The atomic structure of a material determines whether it is a conductor, an insulator, or a semiconductor.

Knowledge and Skills

It is expected that students will:

- Identify and categorize energy sources as nonrenewable, renewable, or inexhaustible.
- Create and deliver a presentation to explain a specific energy source.
- Summarize and reflect upon information collected during a visit to a local utility company.
- Define the possible types of power conversion.
- Calculate work and power.
- Demonstrate the correct use of a digital multimeter.
- Calculate power in a system that converts energy from electrical to mechanical.
- Determine efficiency of a system that converts an electrical input to a mechanical output.
- Calculate circuit resistance, current, and voltage using Ohm's law.
- Understand the advantages and disadvantages of parallel and series circuit design in an application.

Lesson 1.3 Energy Applications (10 days)

Understandings:

1. Energy management is focused on efficient and accessible energy use.
2. System energy requirements must be understood in order to select the proper energy source.
3. Energy systems can include multiple energy sources that can be combined to convert energy into useful forms.
4. Hydrogen fuel cells create electricity and heat through an electrochemical process that converts hydrogen and oxygen into water.
5. Solar cells convert light energy into electricity by using photons to create electron flow.
6. Thermodynamics is the study of the effects of work, thermo energy, and energy on a system.
7. Thermo energy can transfer via convection, conduction, or radiation.
8. Material conductivity, resistance, and energy transfer can be calculated.

Knowledge and Skills
It is expected that students will:

- Test and apply the relationship between voltage, current, and resistance relating to a photovoltaic cell and a hydrogen fuel cell.
- Experiment with a solar hydrogen system to produce mechanical power.
- Design, construct, and test recyclable insulation materials.
- Test and apply the relationship between R-values and recyclable insulation.
- Complete calculations for conduction, R-values, and radiation.

Lesson 1.4 Design Problem – Energy and Power (13 days)

Understandings:

1. Design problems can be solved by individuals or in teams.
2. Engineers use a design process to create solutions to existing problems.
3. Design briefs are used to identify the problem specifications and to establish project constraints.
4. Teamwork requires constant communication to achieve the desired goal.
5. Design teams conduct research to develop their knowledge base, stimulate creative ideas, and make informed decisions.

Knowledge and Skills
It is expected that students will:

- Brainstorm and sketch possible solutions to an existing design problem.
- Create a decision-making matrix for a design problem.
• Select an approach that meets or satisfies the constraints provided in a design brief.
• Create a detailed pictorial sketch or use 3D modeling software to document the best choice, based upon the design team’s decision matrix.
• Present a workable solution to the design problem.

Unit 2: Materials and Structures (40 days)

Lesson 2.1 Statics (14 Days)

Understandings:

1. Laws of motion describe the interaction of forces acting on a body.
2. Structural member properties including centroid location, moment of inertia, and modulus of elasticity are important considerations for structure design.
3. Static equilibrium occurs when the sum of all forces acting on a body are equal to zero.
4. Applied forces are vector quantities with a defined magnitude, direction, and sense, and can be broken into vector components.
5. Forces acting at a distance from an axis or point attempt to cause an object to rotate.
6. In a statically determinate truss, translational and rotational equilibrium equations can be used to calculate external and internal forces.
7. Free body diagrams are used to illustrate and calculate forces acting upon a given body.

Knowledge and Skills

It is expected that students will:

• Create free body diagrams of objects, identifying all forces acting on the object.
• Mathematically locate the centroid of structural members.
• Calculate moment of inertia of structural members.
• Differentiate between scalar and vector quantities.
• Identify magnitude, direction, and sense of a vector.
• Calculate the X and Y components given a vector.
• Calculate moment forces given a specified axis.
• Use equations of equilibrium to calculate unknown forces.
• Use the method of joints strategy to determine forces in the members of a statically determinate truss.
Lesson 2.2 Material Properties (11 Days)

Understandings:

1. Materials are the substances with which all objects are made.
2. Materials are composed of elements and area categorized by physical and chemical properties.
3. Materials consist of pure elements. Compounds and mixtures and are typically classified as metallic, ceramic, organic, polymeric, and composite.
4. Material properties including recyclability and cost are important considerations for engineers when choosing appropriate materials for a design.
5. Material selection is based upon mechanical, thermal, electromagnetic, and chemical properties.

Knowledge and Skills

It is expected that students will:

- Investigate specific material properties related to a common household product.
- Conduct investigative non-destructive material property tests on selected common household products. Property testing conducted to identify continuity, ferrous metal, hardness, and flexure.
- Calculate weight, volume, mass, density, and surface area of selected common household product.
- Identify the manufacturing processes used to create the selected common household product.
- Identify the recycling codes.
- Promote recycling using current media trends.

Lesson 2.3 Material Testing (10 Days)

Understandings:

1. Engineers utilize a design process and mathematical formulas to solve and document design problems.
2. Material testing aids in determining a product's reliability, safety, and predictability in function.
3. Engineers perform destructive and non-destructive tests on material specimens for the purpose of identifying and verifying the properties of various materials.
4. Material testing provides a reproducible evaluation of material properties.
5. Tensile testing data is used to create a test sample stress strain curve.
6. Stress strain data points are used to identify and calculate sample material properties including elastic range, proportional limit, modulus of elasticity, elastic limit, resilience, yield point, plastic deformation, ultimate strength, failure, and ductility.

Knowledge and Skills

It is expected that students will:

- Utilize a five-step technique to solve word problems.
- Obtain measurements of material samples.
- Tensile test a material test sample.
- Identify and calculate test sample material properties using a stress strain curve.

Lesson 2.4 Design Problem – Materials and Structures (5 days)

Understandings:

1. Design problems can be solved by individuals or in teams.
2. Engineers use a design process to create solutions to existing problems.
3. Design briefs are used to identify the problem specifications and establish project constraints.
4. Teamwork requires constant communication to achieve the desired goal.
5. Design teams conduct research to develop their knowledge base, stimulate creative ideas, and make informed decisions.

Knowledge and Skills

It is expected that students will:

- Brainstorm and sketch possible solutions to an existing design problem.
- Create a decision making matrix for the design problem.
- Select an approach that meets or satisfies the constraints given in a design brief.
- Create a detailed pictorial sketch or use 3D modeling software to document the best choice, based upon your team’s decision matrix.
- Present a workable design solution.

Unit 3: Control Systems (46 days)

Lesson 3.1 Machine Control (16 days)

Understandings:
1. Flowcharts provide a step by step schematic representation of an algorithm or process.

2. Control systems are designed to provide consentient process control and reliability.

3. Control system protocols are an established set of commands or functions typically created in a computer programming language.

4. Closed loop systems use digital and analog sensor feedback to make operational and process decisions.

5. Open loop systems use programming constants such as time to make operational and process decisions.

Knowledge and Skills
It is expected that students will:

- Create detailed flow charts utilizing a computer software application.
- Create control system operating programs utilizing computer software.
- Create system control programs that utilize flowchart logic.
- Choose appropriate inputs and output devices based on the need of a technological system.
- Differentiate between the characteristics of digital and analog devices.
- Judge between open and closed loop systems in order to choose the most appropriate system for a given technological problem.
- Design and create a control system based on given needs and constraints.

Lesson 3.2 Fluid Power (15 days)

Understandings:

1. Fluid power systems are categorized as either pneumatic, which utilizes gas, or hydraulic, which utilizes liquid.

2. Fluid power is possible because in a system of confined fluid, pressure acts equally in all directions.

3. The most basic components of all fluid power systems include a reservoir or receiver, a pump or compressor, a valve, and a cylinder.

4. Fluid power systems are designed to transmit force over great distances, multiply an input force, and increase the distance that an output will move.

5. Laws about the behavior of fluid systems and standard conventions for calculating values within fluid systems aid in the design and understanding of such systems.

6. Standard schematic symbols and conventions are used to communicate fluid power designs.

Knowledge and Skills
It is expected that students will:
• Identify devices that utilize fluid power.
• Identify and explain basic components and functions of fluid power devices.
• Differentiate between the characteristics of pneumatic and hydraulic systems.
• Distinguish between hydrodynamic and hydrostatic systems.
• Design, create, and test a hydraulic device.
• Design, create, and test a pneumatic device.
• Calculate values in a fluid power system utilizing Pascal's Law.
• Distinguish between pressure and absolute pressure.
• Distinguish between temperature and absolute temperature.
• Calculate values in a pneumatic system, utilizing the perfect gas laws.
• Calculate flow rate, flow velocity, and mechanical advantage in a hydraulic system.

Lesson 3.3 Design Problem – Control Systems (15 days)

Understanding:

1. Design problems can be solved by individuals or in teams.
2. Engineers use a design process to create solutions to existing problems.
3. Design briefs are used to identify the problem specifications and to establish project constraints.
4. Teamwork requires constant communication to achieve the desired goal.
5. Design teams conduct research to develop their knowledge base, stimulate creative ideas, and make informed decisions.

Knowledge and Skills

It is expected that students will:

• Brainstorm and sketch possible solutions to an existing design problem.
• Create a decision-making matrix for a design problem.
• Select an approach that meets or satisfies the constraints provided in a design brief.
• Create a detailed pictorial sketch or use 3D modeling software to document the best choice, based upon the design team’s decision matrix.
• Present a workable solution to the design problem.
Unit 4: Statistics and Kinematics (30 days)

Lesson 4.1 Statistics (5 days)

Understandings:

1. Engineers use statistics to make informed decisions based upon established principles.
2. Visual representations of data analyses allow for easy distribution and understanding of data.
3. Statistics is based upon both theoretical and experimental data analysis.

Knowledge and Skills

It is expected that students will:

- Calculate the theoretical probability that an event will occur.
- Calculate the experimental frequency distribution of an event occurring.
- Apply the Bernoulli process to events that only have two distinct possible outcomes.
- Apply AND, OR, and NOT logic to probability.
- Apply Bayes’ theorem to calculate the probability of multiple events occurring.
- Create a histogram to illustrate frequency distribution.
- Calculate the central tendency of a data array, including mean, median, and mode.
- Calculate data variation, including range, standard deviation, and variance.

Lesson 4.2 Kinematics (10 Days)

Understandings:

1. When working with bodies in motion, engineers must be able to differentiate and calculate distance, displacement, speed, velocity, and acceleration.
2. When air resistance is not taken into account, released objects will experience acceleration due to gravity, also known as freefall.
3. Projectile motion can be predicted and controlled using kinematics equations.
4. When a projectile is launched, velocity in the x direction remains constant; whereas, with time, the velocity in the Y direction in magnitude and direction changes due to gravity.

Knowledge and Skills

It is expected that students will:

- Calculate distance, displacement, speed, velocity, and acceleration from data.
- Design, build, and test a vehicle that stores and releases potential energy for propulsion.
• Calculate acceleration due to gravity given data from a free fall device.
• Calculate the X and Y components of a projectile motion.
• Determine the angle needed to launch a projectile a specific range given the projectile's initial velocity.
Common Core State Standards for Mathematical Practice (HS)

Number and Quantity

Quantities
- Reason Quantitatively And Use Units To Solve Problems.

L.1.1, L.1.4, L.2.2, L.2.3, L.2.4, L.4.2
1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. (N.Q.1)
L.1.1, L.1.4, L.2.3, L.2.4, L.4.2
2. Define appropriate quantities for the purpose of descriptive modeling. (N.Q.2)
L.1.1, L.1.4, L.2.2, L.2.3, L.3.3, L.4.2
3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (N.Q.3)

The Real Number System
- Extend The Properties Of Exponents To Rational Exponents.

L.4.2
2. Rewrite expressions involving radicals and rational exponents using the properties of exponents. (N.RN.2)

Vector And Matrix Quantities
- Represent And Model With Vector Quantities.

L.4.2
1. (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., \( \mathbf{v}, ||v||, v \)). (N.VM.1)
L.4.2
2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. (N.VM.2)
L.4.2
3. (+) Solve problems involving velocity and other quantities that can be represented by vectors. (N.VM.3)
Algebra

Seeing Structure In Expressions
-Interpret The Structure Of Expressions

L1.1, L2.3, L4.2
1. Interpret expressions that represent a quantity in terms of its context. (A.SSE.1)
L1.1, L2.3, L4.2
1.a. Interpret parts of an expression, such as terms, factors, and coefficients. (A.SSE.1.a)
L1.1, L2.3, L4.2
1.b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret \( P(1+r)^n \) as the product of \( P \) and a factor not depending on \( P \). (A.SSE.1.b)

Creating Equations
-Create Equations That Describe Numbers Or Relationships

L1.1
1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. (A.CED.1)
L1.1, L4.2
4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law \( V = IR \) to highlight resistance \( R \). (A.CED.4)
L4.2
3. Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. (A.CED.3)

Reasoning With Equations And Inequalities
-Solve Equations And Inequalities In One Variable

L1.1, L4.2
3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. (A.REI.3)
L4.2
4. Solve quadratic equations in one variable. (A.REI.4)

Functions

Linear, Quadratic, And Exponential Models
-Construct And Compare Linear, Quadratic, And Exponential Models And Solve Problems

L1.1
1.b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. (F.LE.1.b)
**Trigonometric Functions**
- Model Periodic Phenomena With Trigonometric Functions

**L4.2**
7. (+) Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.* (F.TF.7)

**Geometry**

**Modeling With Geometry**
- Apply Geometric Concepts In Modeling Situations

**L1.1** , **L2.2**
1. Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).* (G.MG.1)

**L1.1** , **L4.2**
3. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).* (G.MG.3)

**L2.2**
2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).* (G.MG.2)

**Geometric Measurement And Dimension**
- Explain Volume Formulas And Use Them To Solve Problems

**L2.2**
3. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.* (G.GMD.3)

- Visualize Relationships Between Two-Dimensional And Three-Dimensional Objects

**L2.2**
4. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. (G.GMD.4)

**Similarity, Right Triangles, And Trigonometry**
- Define Trigonometric Ratios And Solve Problems Involving Right Triangles

**L4.2**
6. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. (G.SRT.6)

**L4.2**
8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.* (G.SRT.8)

**Statistics and Probability**
Interpreting Categorical And Quantitative Data
-Summarize, Represent, And Interpret Data On A Single Count Or Measurement Variable

L4.1
1. Represent data with plots on the real number line (dot plots, histograms, and box plots). (S.ID.1) 
L4.1, L4.2
2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) 
and spread (interquartile range, standard deviation) of two or more different data sets. (S.ID.2) 
L4.1
3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for 
possible effects of extreme data points (outliers). (S.ID.3)
L4.1
4. Use the mean and standard deviation of a data set to fit it to a normal distribution and to 
estimate population percentages. Recognize that there are data sets for which such a procedure is 
not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal 
curve. (S.ID.4)

Making Inferences And Justifying Conclusions
-Understand And Evaluate Random Processes Underlying Statistical Experiments

L4.1
1. Understand statistics as a process for making inferences about population parameters based on a 
random sample from that population. (S.IC.1) 
L4.1
2. Decide if a specified model is consistent with results from a given data-generating process, e.g., 
using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. 
Would a result of 5 tails in a row cause you to question the model? (S.IC.2)

-Make Inferences And Justify Conclusions From Sample Surveys, Experiments, And Observational 
Studies

L4.1
4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of 
error through the use of simulation models for random sampling. (S.IC.4)

Conditional Probability And The Rules Of Probability
-Understand Independence And Conditional Probability And Use Them To Interpret Data

L4.1
1. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or 
categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” 
“and,” “not”). (S.CP.1) 
L4.1
2. Understand that two events A and B are independent if the probability of A and B occurring 
together is the product of their probabilities, and use this characterization to determine if they are 
independent. (S.CP.2) 
L4.1
3. Understand the conditional probability of A given B as P(A and B)/P(B), and interpret 
independence of A and B as saying that the conditional probability of A given B is the same as the 
probability of A, and the conditional probability of B given A is the same as the probability of B. 
(S.CP.3)
L4.1
4. Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results. (S.CP.4)
L4.1
5. Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer. (S.CP.5)

-Use The Rules Of Probability To Compute Probabilities Of Compound Events In A Uniform Probability Model

L4.1
6. Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model. (S.CP.6)
L4.1
7. Apply the Addition Rule, \( P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B) \), and interpret the answer in terms of the model. (S.CP.7)
L4.1
8. (+) Apply the general Multiplication Rule in a uniform probability model, \( P(A \text{ and } B) = P(A)P(B|A) = P(B)P(A|B) \), and interpret the answer in terms of the model. (S.CP.8)
L4.1
9. (+) Use permutations and combinations to compute probabilities of compound events and solve problems. (S.CP.9)

Using Probability To Make Decisions
-Use Probability To Evaluate Outcomes Of Decisions

L4.1
7. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game). (S.MD.7)

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Retrieved: March 12, 2014
Showing Results for:
Course: Principles Of Engineering
Units: 1, 2, 3 & 4
Next Generation Science Standards

Next Generation Science Standards

High School

Engineering Design

L1.1, L3.3
HS-ETS1-2. Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. (HS.ETS1.2)
L1.4
HS-ETS1-1. Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants. (HS.ETS1.1)
L2.4, L3.2, L3.3
HS-ETS1-3. Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts. (HS.ETS1.3)

Energy

L1.2, L1.4, L3.2, L4.2
HS-PS3-3. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. * (HS.PS3.3)

Matter and Its Interactions

L2.3
HS-PS1-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. (HS.PS1.3)

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Retrieved: March 12, 2014
Tuscaloosa County School System

<table>
<thead>
<tr>
<th>TCSS and/or TCTA Course</th>
<th>Traditional Course</th>
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<tbody>
<tr>
<td>Foundation of Health Science</td>
<td>Human Anatomy and Physiology</td>
</tr>
<tr>
<td>Therapeutic Services</td>
<td>Forensic Science</td>
</tr>
<tr>
<td>Health Science Internship</td>
<td>Life Science Elective</td>
</tr>
<tr>
<td>AL State course of Study Objectives for Anatomy and Physiology:</td>
<td>AL State Course of study objectives for Health Science courses – (F) Foundations of HS, (TS) Therapeutic Services and (H) HS Internship</td>
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<td>---------------------------------------------------------------</td>
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</tr>
</tbody>
</table>
| Use appropriate anatomical terminology.  
Examples: proximal, superficial, medial, supine, superior, inferior, anterior, posterior | F6 Describe basic structures and functions of the human body systems.  
TS4.) Identify human structures and functions as they relate to therapeutic services. |
| Identify anatomical body planes, body cavities, and abdominopelvic regions of the human body. | F6 Describe basic structures and functions of the human body systems.  
TS4.) Identify human structures and functions as they relate to therapeutic services. |
| Classify tissues as connective, muscular, nervous, or epithelial. | F6 Describe basic structures and functions of the human body systems.  
TS4.) Identify human structures and functions as they relate to therapeutic services. |
| Identify anatomical structures and functions of the integumentary system.  
* Identifying accessory organs  
* Recognizing diseases and disorders of the integumentary system  
Examples: decubitus ulcer, melanoma, psoriasis | F6 Describe basic structures and functions of the human body systems.  
TS4.) Identify human structures and functions as they relate to therapeutic services.  
Examples: respiratory system—maintaining an open airway  
- musculoskeletal system—range-of-motion exercises |
| Identify bones that compose the skeletal system.  
* Identifying functions of the skeletal system | F6 Describe basic structures and functions of the human body systems.  
TS4 Identify human structures and functions as |
<table>
<thead>
<tr>
<th>Identification of skeletal system</th>
<th>they relate to therapeutic services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subdivisions of the skeleton</td>
<td>Examples: respiratory system—maintaining an open airway</td>
</tr>
<tr>
<td>Axial and appendicular skeletons</td>
<td>- musculoskeletal system—range-of-motion exercises</td>
</tr>
<tr>
<td>Classifying types of joints</td>
<td>F12 Describe fundamentals of health promotion and wellness.</td>
</tr>
<tr>
<td>According to movement</td>
<td>Examples: disease prevention, exercise, proper diet, avoiding at-risk behaviors</td>
</tr>
<tr>
<td>Identifying the four bone types</td>
<td>TS8 Demonstrate clinical and technical skills necessary in therapeutic services.</td>
</tr>
<tr>
<td>Identifying various types of</td>
<td>Examples: bed making, crutch walking, care for decubitus ulcers/bedsores,</td>
</tr>
<tr>
<td>skeletal system disorders</td>
<td>H2 Identify basic treatments for selected diseases and disorders.</td>
</tr>
<tr>
<td>Examples: fractures, arthritis</td>
<td>TS5 Assess safe practices necessary in therapeutic services.</td>
</tr>
<tr>
<td>Identify major muscles,</td>
<td>Examples: crutch walking, canes, walkers, assistive devices.</td>
</tr>
<tr>
<td>including origins, insertions</td>
<td>F6 Describe basic structures and functions of the human body systems. -Muscular</td>
</tr>
<tr>
<td>and actions.</td>
<td>TS4 Identify human structures and functions as they relate to therapeutic services.</td>
</tr>
<tr>
<td>Describing common types of body</td>
<td>Examples: respiratory system—maintaining an open airway</td>
</tr>
<tr>
<td>movements, including flexion,</td>
<td>- musculoskeletal system—range-of-motion exercises</td>
</tr>
<tr>
<td>extension, abduction, and</td>
<td>F12 Describe fundamentals of health promotion and wellness.</td>
</tr>
<tr>
<td>adduction</td>
<td>H2 Identify basic treatments for selected diseases and disorders.</td>
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<td>Classifying muscles based on</td>
<td>TS5 Assess safe practices necessary in therapeutic services.</td>
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<tr>
<td>functions in the body, including</td>
<td>Examples: evaluating scene, lifting and moving client, using standard precautions</td>
</tr>
<tr>
<td>prime movers, antagonists,</td>
<td>TS4 Identify human structures and functions as they relate to therapeutic services.</td>
</tr>
<tr>
<td>synergists, and fixators</td>
<td>Examples:</td>
</tr>
<tr>
<td>Identifying diseases and disorders</td>
<td></td>
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<tr>
<td>of the muscular system</td>
<td></td>
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<tr>
<td>Examples: muscular dystrophy,</td>
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<tr>
<td>multiple sclerosis, strain</td>
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<tr>
<td>Identify structures of the nervous system.</td>
<td>- musculoskeletal system—range-of-motion exercises</td>
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<tr>
<td>- Explaining differences in the function of the peripheral nervous system and the central nervous system</td>
<td>F6 Describe basic structures and functions of the human body systems. —Nervous system</td>
</tr>
<tr>
<td>- Recognizing diseases and disorders of the nervous system</td>
<td>TS4 Identify human structures and functions as they relate to therapeutic services.</td>
</tr>
<tr>
<td>Examples: Parkinson's disease, meningitis</td>
<td>Examples: respiratory system—maintaining an open airway</td>
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<td>- musculoskeletal system—range-of-motion exercises</td>
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<td>F12 Describe fundamentals of health promotion and wellness.</td>
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<td>Examples: disease prevention, exercise, proper diet, avoiding at-risk behaviors</td>
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<td>H2 Identify basic treatments for selected diseases and disorders.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Identify structures and functions of the cardiovascular system.</th>
<th>F6 Describe basic structures and functions of the human body systems. —Cardiovascular system</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Tracing the flow of blood through the body</td>
<td>TS4 Identify human structures and functions as they relate to therapeutic services.</td>
</tr>
<tr>
<td>- Identifying components of blood</td>
<td>F13 Demonstrate common technical skills required in the health care industry.</td>
</tr>
<tr>
<td>- Describing blood cell formation</td>
<td>Examples: assessing vital signs (pulse respirations on dBlood Pressure) demonstrating cardiopulmonary resuscitation (CPR), administering first aid (for bleeding wounds and shock, cardiac arrest), practicing infection control</td>
</tr>
<tr>
<td>- Distinguishing among human blood groups</td>
<td>H2 Identify basic treatments for selected diseases and disorders.</td>
</tr>
<tr>
<td>- Describing common cardiovascular diseases and disorders</td>
<td>T9 Identify diseases and disorders commonly associated with therapeutic careers.</td>
</tr>
<tr>
<td>Examples: myocardial infarction, mitral valve prolapse, varicose veins, arteriosclerosis</td>
<td>Examples: congestive heart failure (CHF),</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identify structures and functions of the digestive system.</th>
<th>F6 Describe basic structures and functions of the human body systems. Digestive System</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Tracing the pathway of digestion from the</td>
<td>TS4 Identify human structures and functions as</td>
</tr>
<tr>
<td>Identification/Function</td>
<td>Examples</td>
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<tr>
<td>Identifying disorders affecting the digestive system</td>
<td>ulcers, Crohn's disease, diverticulitis</td>
</tr>
<tr>
<td>Identify structures and functions of the respiratory system.</td>
<td>- Tracing the pathway of the oxygen and carbon dioxide exchange - Recognizing common disorders of the respiratory system Examples: asthma, bronchitis, cystic fibrosis</td>
</tr>
<tr>
<td>Identify structures and functions of the reproductive system.</td>
<td>- Differentiating between male and female reproductive systems - Recognizing stages of pregnancy and fetal development - Identifying disorders of the reproductive system Examples: endometriosis, sexually transmitted</td>
</tr>
<tr>
<td>T9 Identify diseases and disorders commonly associated with therapeutic careers.</td>
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<td>TS9 Identify diseases and disorders commonly associated with therapeutic careers.</td>
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<td>F13 Demonstrate common technical skills required in the health care industry. Examples: assessing vital signs (Breathing difficulty, Respiratory rates and normal ranges, respiratory arrest) demonstrating cardiopulmonary resuscitation (CPR), Examples: respiratory system—maintaining an open airway</td>
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<tr>
<td>diseases, prostate cancer</td>
<td>care</td>
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</tr>
</tbody>
</table>
| - Identify structures and functions of the urinary system.  
  - Tracing the filtration of blood from the kidneys to the urethra  
  - Recognizing diseases and disorders of the urinary system  
  Examples: kidney stones, urinary tract infections | F6 Describe basic structures and functions of the human body systems. -Urinary System TS4 Identify human structures and functions as they relate to therapeutic services. Examples: respiratory system—maintaining an open airway - musculoskeletal system—range-of-motion exercises H2 Identify basic treatments for selected diseases and disorders. TS9 Identify diseases and disorders commonly associated with therapeutic careers. |
| Identify the endocrine glands and their functions.  
  - Describing effects of hormones produced by the endocrine glands  
  - Identifying common disorders of the endocrine system  
  Examples: diabetes, goiter, hyperthyroidism | F6 Describe basic structures and functions of the human body systems. Endocrine system TS4 Identify human structures and functions as they relate to therapeutic services. Examples: respiratory system—maintaining an open airway - musculoskeletal system—range-of-motion exercises TS9 Identify diseases and disorders commonly associated with therapeutic careers. Examples: diabetes H2 Identify basic treatments for selected diseases and disorders. |
| Identify physiological effects and components of the immune system.  
  - Contrasting active and passive immunity  
  - Evaluating the importance of vaccines  
  - Recognizing disorders and diseases of the immune system  
  Examples: acquired immunodeficiency syndrome (AIDS), acute lymphocytic leukemia | F6 Describe basic structures and functions of the human body systems. TS4 Identify human structures and functions as they relate to therapeutic services. Examples: respiratory system—maintaining an open airway - musculoskeletal system—range-of-motion exercises |
## Course Crosswalk for Health Science and AI state course of Study for Science

<table>
<thead>
<tr>
<th>H2 Identify basic treatments for selected diseases and disorders.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ts9 Identify diseases and disorders commonly associated with therapeutic careers.</td>
</tr>
<tr>
<td>Examples: HIV/AIDS, others</td>
</tr>
<tr>
<td>F13 Demonstrate common technical skills required in the health care industry.</td>
</tr>
<tr>
<td>Examples: Personal Protective Equipment and Standard Precautions</td>
</tr>
</tbody>
</table>

### AL State course of study for Forensic science:

<table>
<thead>
<tr>
<th>Describe general categories of drugs and poisons and their effects on humans.</th>
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</thead>
<tbody>
<tr>
<td>TS 7 Identify common medications used in therapeutic careers.</td>
</tr>
<tr>
<td>Examples: diuretics, antibiotics, bronchodilators</td>
</tr>
<tr>
<td>H8 Analyze medications and treatments of selected clients using medical references to determine classifications, indications, contraindications, side effects, and dosages.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Describe presumptive and confirmatory tests.</th>
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<tbody>
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<td>Examples: blood type comparison, DNA testing</td>
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<tr>
<td>F13 Demonstrate common technical skills required in the health care industry.</td>
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<tr>
<td>Examples: blood typing and Testing, hemoglobin and hematocrit, glucose testing</td>
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<tr>
<td>TCSS and/or TCTA Course</td>
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</tr>
<tr>
<td>Business Finance</td>
</tr>
<tr>
<td>Accounting</td>
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<tr>
<td>Social Studies, Grade 12, Economics 2010</td>
</tr>
<tr>
<td>----------------------------------------</td>
</tr>
<tr>
<td>1.) Explain why productive resources are limited and why individuals, businesses, and governments have to make choices in order to meet needs and wants.</td>
</tr>
<tr>
<td>2.) Explain how rational decision making entails comparing additional costs of alternatives to additional benefits.</td>
</tr>
<tr>
<td>3.) Describe different economic systems used to allocate scarce goods and services.</td>
</tr>
<tr>
<td>4.) Describe the role of government in a market economy, including promoting and securing competition, protecting private property rights, promoting equity, providing public goods and services, resolving externalities and other market failures, and stabilizing growth in the economy.</td>
</tr>
<tr>
<td>5.) Explain that a country's standard of living depends upon its ability to produce goods and services.</td>
</tr>
<tr>
<td>6.) Describe how specialization and voluntary exchange between buyers and sellers lead to mutually beneficial outcomes.</td>
</tr>
<tr>
<td>7.) Describe the organization and role of business.</td>
</tr>
<tr>
<td>8.) Explain the impact of the labor market on the United States' economy.</td>
</tr>
<tr>
<td>9.) Describe methods used to measure overall economic activity, including the Gross Domestic Product (GDP), the Consumer Price Index (CPI), inflation, and unemployment.</td>
</tr>
<tr>
<td>Examples: recruiting, hiring costs, training costs, fringe benefits, etc.</td>
</tr>
<tr>
<td>5.) Explain methods used by companies to screen individuals for employment or promotion.</td>
</tr>
<tr>
<td>Examples: drug test, credit check, background check, and workplace proficiency.</td>
</tr>
<tr>
<td>• Analyzing inflation rates to determine how they affect interest rates</td>
</tr>
<tr>
<td>10.) Explain the structure, role, and functions of the United States Federal Reserve System.</td>
</tr>
<tr>
<td>4.) Compare currency standards and valuations in a global economy.</td>
</tr>
<tr>
<td>Examples: financial software, computer numeric keypad.</td>
</tr>
</tbody>
</table>
| 12.) Explain why individuals, businesses, and governments trade goods and services in the global economy. | 1.) Utilize research results to analyze current events, laws, and regulations to determine their impact on the global financial market.  
8.) Compare funding sources for new and expanding businesses.  
Examples: private funding, venture capital, and loans. |
## COMPARISON OF ACCOUNTING AND ALGEBRAIC CONNECTIONS OBJECTIVES
FOR EMBEDDING MATHEMATICS CREDIT IN ACCOUNTING

<table>
<thead>
<tr>
<th>ACCOUNTING OBJECTIVES 470012</th>
<th>ALGEBRAIC CONNECTIONS OBJECTIVES 600039</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use technologies needed to perform job functions in the field of accounting. Examples: accounting software, computer numeric keypad, spreadsheets, income tax software 11. Apply payroll functions to employee and employer records. Examples: calculating gross pay and deductions, journalizing and posting tax and payroll entries</td>
<td>1. Create algebraic models for application-based problems by developing and solving equations and inequalities, including those involving direct, inverse, and joint variation. (Alabama) Example: The amount of sales tax on a new car is directly proportional to the purchase price of the car. If the sales tax on a $20,500 car is $1,600, what is the purchase price of a new car that has a sales tax of $3,200? Answer: The purchase price of the new car is $41,000.</td>
</tr>
<tr>
<td>5. Analyze the accounting equation for the purpose of relating it to the accounting cycle. Examples:  • journalizing and posting transactions, reporting financial statements  • how business activities change the accounting equation  • how transaction change owner’s equity in an accounting equation</td>
<td>2. Solve application-based problems by developing and solving systems of linear equations and inequalities. (Alabama)</td>
</tr>
<tr>
<td>3. Apply and analyze the steps of the Accounting Cycle:  • Preparing financial statements (balance sheet, income statement, operating expense statement, cash flow)  • Preparing a post-closing trial balance 5. Calculate the depreciation of a fixed asset. 7. Explain accounting functions of fixed assets and depreciation.</td>
<td>3. Use formulas or equations of functions to calculate outcomes of exponential growth or decay. (Alabama) Example: Solve problems involving compound interest, bacterial growth, carbon-14 dating, and depreciation.</td>
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<tr>
<td>1. Use technologies needed to perform job functions in the field of accounting. Example: To determine the function of best fit for a set of data, students should recognize which category of function bests fit the data and know how to use technology to obtain a function.</td>
<td>4. Determine maximum and minimum values of a function using linear programming procedures. (Alabama) Example: Observe the boundaries ( x \geq 0, y \geq 0, 2x - 3y + 15 \geq 0, ) and ( x \leq 9 ) to find the maximum and minimum values of ( f(x,y) = 3x + 5y )</td>
</tr>
<tr>
<td>1. Interpret data from a variety of financial statements, including verifying data for business reports and creating charts and graphs for accurate reporting.</td>
<td>5. Determine approximate rates of change of nonlinear relationships from graphical and numerical data. (Alabama) a. Create graphical representations from tables, equations, or classroom-</td>
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</tbody>
</table>
### COMPARISON OF ACCOUNTING AND ALGEBRAIC CONNECTIONS OBJECTIVES FOR EMBEDDING MATH CREDIT IN ACCOUNTING

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Utilize research results to analyze current accounting practices as they relate to service, manufacturing, and merchandising businesses.</td>
<td>generated data to model consumer costs and to predict future outcomes. (Alabama)</td>
</tr>
<tr>
<td>6. Interpret data from a variety of financial statements, including verifying data for business reports and creating charts and graphs for accurate reporting.</td>
<td>6. Use the extreme value of a given quadratic function to solve applied problems. (Alabama)</td>
</tr>
<tr>
<td>8. Utilize research results to analyze current accounting practices as they relate to service, manufacturing, and merchandising businesses.</td>
<td>Example: Determine the selling price needed to maximize profit.</td>
</tr>
<tr>
<td>1. Use technologies needed to perform job functions in the field of accounting.</td>
<td>7. Use analytical, numerical, and graphical methods to make financial and economic decisions, including those involving banking and investments, insurance, personal budgets, credit purchases, recreation, and deceptive and fraudulent pricing and advertising. (Alabama)</td>
</tr>
<tr>
<td>Examples: accounting software, computer numeric keypad, spreadsheets,</td>
<td>Examples: Determine the best choice of certificates of deposit, savings accounts, checking accounts, or loans. Compare the costs of fixed- or variable-rate mortgage loans. Compare costs associated with various credit cards. Determine the best cellular telephone plan for a budget.</td>
</tr>
<tr>
<td>income tax software</td>
<td>a. Create, manually or with technological tools, graphs and tables related to personal finance and economics. (Alabama)</td>
</tr>
<tr>
<td>10. Apply banking and cash control functions to checks, deposits,</td>
<td>Example: Use spreadsheets to create an amortization table for a mortgage loan or a circle graph for a personal budget.</td>
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<td>reconciliation, petty cash, online and electronic banking, and related</td>
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<td>journal entries.</td>
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<td>11. Apply payroll functions to employee and employer records.</td>
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<td>Examples: calculating gross pay and deductions, journalizing and posting tax and payroll entries</td>
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<td>12. Demonstrate correct procedures for completing federal, state, and local income tax forms.</td>
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<tr>
<td>CCRS Math - Enrichment</td>
<td>8. Determine missing information in an application-based situation using properties of right triangles, including trigonometric ratios and the Pythagorean Theorem. (Alabama)</td>
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<td>Example: Use a construction or landscape problem to apply trigonometric ratios and the Pythagorean Theorem.</td>
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<tr>
<td>4. Compare assets, liabilities and owner's equity and evaluate the information from balance sheets, financial statements and income statements as to be able to determine the feasibility of operating the business.</td>
<td>9. Analyze aesthetics of physical models for line symmetry, rotational symmetry, or the golden ratio. (Alabama)</td>
</tr>
<tr>
<td>Example: Discuss the symmetry of transactions within the accounting formula</td>
<td>Example: Identify the symmetry found in nature, art, or architecture.</td>
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<tr>
<td>Objective</td>
<td>Example</td>
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<td>--------------------------------------------------------------------------</td>
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<td>6. Interpret data from a variety of financial statements, including verifying data for business reports and creating charts and graphs for accurate reporting.</td>
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<td>8. Utilize research results to analyze current accounting practices as they relate to service, manufacturing, and merchandising businesses.</td>
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<td>Examples: Use ratios to measure a firm's bottom line (return on sales), i.e. if a firm's net profit margin is 6 percent, this means that the company earned $6 for each $100 in sales. The gross profit margin indicates the profit earned after production costs of the product, but before any fixed and overhead expenses. It is a measure of the manufacturing process productivity. Operating profit measures the profits of the firm exclusive of financing costs. This ratio is frequently known as EBITA (profits before interest, taxes and amortization).</td>
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<tr>
<td>6. Interpret data from a variety of financial statements, including verifying data for business reports and creating charts and graphs for accurate reporting.</td>
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<tr>
<td>Examples: Create models of profit analysis for various business sectors as a function of time and predict market probabilities given a frequency distribution.</td>
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<tr>
<td>10. Critique measurements in terms of precision, accuracy, and approximate error. (Alabama)</td>
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<tr>
<td>Example: Determine whether one candidate has a significant lead over another candidate when given their current standings in a poll and the margin of error.</td>
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<tr>
<td>11. Use ratios of perimeters, areas, and volumes of similar figures to solve applied problems. (Alabama)</td>
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<tr>
<td>Example: Use a blueprint or scale drawing of a house to determine the amount of carpet to be purchased.</td>
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<td>12. Create a model of a set of data by estimating the equation of a curve of best fit from tables of values or scatter plots. (Alabama)</td>
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<tr>
<td>Examples: Create models of election results as a function of population change, inflation or employment rate as a function of time, cholesterol density as a function of age or weight of a person.</td>
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<tr>
<td>a. Predict probabilities given a frequency distribution. (Alabama)</td>
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Example: The amount of sales tax on a new car is directly proportional to the purchase price of the car. If the sales tax on a $20,500 car is $1,600, what is the purchase price of a new car that has a sales tax of $3,200?  
Answer: The purchase price of the new car is $41,000. |
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Example: Observe the boundaries $x \geq 0, y \geq 0, 2x - 3y + 15 \geq 0$, and $x \leq 9$ to find the maximum and minimum values of $f(x,y) = 3x + 5y$ |
| 5. Determine approximate rates of change of nonlinear relationships from graphical and numerical data. (Alabama) | 6. Create graphical representations from tables, equations, or classroom-
# COMPARISON OF ACCOUNTING AND ALGEBRAIC CONNECTIONS OBJECTIVES
FOR EMBEDDING MATH CREDIT IN ACCOUNTING

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<th>Objective</th>
<th>Mathematical Applications</th>
</tr>
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<tbody>
<tr>
<td>1. Use technologies needed to perform job functions in the field of accounting. Examples: accounting software, computer numeric keypad, spreadsheets, income tax software. 10. Apply banking and cash control functions to checks, deposits, reconciliation, petty cash, online and electronic banking, and related journal entries. 11. Apply payroll functions to employee and employer records. Examples: calculating gross pay and deductions, journalizing and posting tax and payroll entries. 12. Demonstrate correct procedures for completing federal, state, and local income tax forms.</td>
<td>generated data to model consumer costs and to predict future outcomes. (Alabama) 6. Use the extreme value of a given quadratic function to solve applied problems. (Alabama) Example: Determine the selling price needed to maximize profit. 7. Use analytical, numerical, and graphical methods to make financial and economic decisions, including those involving banking and investments, insurance, personal budgets, credit purchases, recreation, and deceptive and fraudulent pricing and advertising. (Alabama) Examples: Determine the best choice of certificates of deposit, savings accounts, checking accounts, or loans. Compare the costs of fixed- or variable-rate mortgage loans. Compare costs associated with various credit cards. Determine the best cellular telephone plan for a budget. a. Create, manually or with technological tools, graphs and tables related to personal finance and economics. (Alabama) Example: Use spreadsheets to create an amortization table for a mortgage loan or a circle graph for a personal budget.</td>
</tr>
<tr>
<td>6. Interpret data from a variety of financial statements, including verifying data for business reports and creating charts and graphs for accurate reporting.</td>
<td>10. Critique measurements in terms of precision, accuracy, and approximate error. (Alabama)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Example:</strong> Determine whether one candidate has a significant lead over another candidate when given their current standings in a poll and the margin of error.</td>
<td>11. Use ratios of perimeters, areas, and volumes of similar figures to solve applied problems. (Alabama)</td>
</tr>
<tr>
<td><strong>Example:</strong> Use a blueprint or scale drawing of a house to determine the amount of carpet to be purchased.</td>
<td>12. Create a model of a set of data by estimating the equation of a curve of best fit from tables of values or scatter plots. (Alabama)</td>
</tr>
</tbody>
</table>
| **Examples:** Use ratios to measure a firm's bottom line (return on sales), i.e., if a firm's net profit margin is 6 percent, this means that the company earned $6 for each $100 in sales. The gross profit margin indicates the profit earned after production costs of the product, but before any fixed and overhead expenses. It is a measure of the manufacturing process productivity. Operating profit measures the profits of the firm exclusive of financing costs. This ratio is frequently known as EBITA (profits before interest, taxes and amortization). | **Examples:** Create models of election results as a function of population change, inflation or employment rate as a function of time, cholesterol density as a function of age or weight of a person. 
**a.** Predict probabilities given a frequency distribution. (Alabama) |
## Academic Scope and Sequence

<table>
<thead>
<tr>
<th>NBEA VIII</th>
<th>Global Economic Concepts Achievement Standard</th>
<th>Examine the role of trade, protectionism, and monetary markets in the global economy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBEA IX</td>
<td>Aggregate Supply and Aggregate Demand Achievement Standard</td>
<td>Analyze how the U.S. economy functions as a whole and describe selected macroeconomic measures of economic activity.</td>
</tr>
<tr>
<td></td>
<td>13–16, 43–47, 51, 53, 98, 331, 824</td>
<td></td>
</tr>
</tbody>
</table>

From the National Standards for Business Education © 2007 by the National Business Education Association, 1914 Association Drive, Reston, VA 20191.

## National Standards for Economic Education

The Council for Economic Education has developed curriculum standards for use in economics curricula. The competencies have been integrated into *Business and Personal Finance*.

<table>
<thead>
<tr>
<th>Council for Economic Education (CEE) Standards</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scarcity</strong></td>
<td>Productive resources are limited. Therefore, people cannot have all the goods and services they want; as a result, they must choose some things and give up others.</td>
</tr>
<tr>
<td></td>
<td>3, 7–8, 18, 28, 722, 808–809</td>
</tr>
<tr>
<td><strong>Marginal Cost/Benefit</strong></td>
<td>Effective decision making requires comparing the additional costs of alternatives with the additional benefits. Most choices involve doing a little more or a little less of something; few choices are “all or nothing” decisions.</td>
</tr>
<tr>
<td><strong>Allocation of Goods and Services</strong></td>
<td>Different methods can be used to allocate goods and services. People acting individually or collectively through government, must choose which methods to use to allocate different kinds of goods and services.</td>
</tr>
<tr>
<td></td>
<td>8–9, 28, 48–50, 63</td>
</tr>
<tr>
<td><strong>Role of Incentives</strong></td>
<td>People respond predictably to positive and negative incentives.</td>
</tr>
<tr>
<td></td>
<td>22–24, 25, 27, 231, 380, 749, 758</td>
</tr>
<tr>
<td><strong>Gain from Trade</strong></td>
<td>Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and among individuals or organizations in different nations.</td>
</tr>
<tr>
<td><strong>Specialisation and Trade</strong></td>
<td>When individuals, regions, and nations specialize in what they can produce at the lowest cost and then trade with others, both production and consumption increase.</td>
</tr>
<tr>
<td></td>
<td>47–50, 243, 686</td>
</tr>
<tr>
<td><strong>Markets—Price and Quantity Determination</strong></td>
<td>Markets exist when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce goods and services.</td>
</tr>
<tr>
<td><strong>Role of Price in Market System</strong></td>
<td>Prices send signals and provide incentives to buyers and sellers. When supply or demand changes, market prices adjust, affecting incentives.</td>
</tr>
<tr>
<td></td>
<td>13–16, 18, 53, 63, 204–206, 257, 259–262, 264, 281, 300, 374, 581–583, 584</td>
</tr>
<tr>
<td><strong>Role of Competition</strong></td>
<td>Competition among sellers lowers costs and prices, and encourages producers to produce more of what consumers are willing and able to buy. Competition among buyers increases prices and allocates goods and services to those people who are willing and able to pay the most for them.</td>
</tr>
<tr>
<td></td>
<td>100, 147, 282, 384, 392, 679, 745, 749, 750, 759</td>
</tr>
</tbody>
</table>
## Academic Scope and Sequence

| Role of Economic Institutions | Institutions evolve in market economies to help individuals and groups accomplish their goals. Banks, labor unions, corporations, legal systems, and not-for-profit organizations are examples of important institutions. A different kind of institution, clearly defined and enforced property rights, is essential to a market economy. |
| Role of Money | Money makes it easier to trade, borrow, save, invest, and compare the value of goods and services. |
| Role of Interest Rates | Interest rates, adjusted for inflation, rise and fall to balance the amount saved with the amount borrowed, which affects the allocation of scarce resources between present and future uses. |
| Role of Resources in Determining Income | Income for most people is determined by the market value of the productive resources they sell. What workers earn depends, primarily, on the market value of what they produce and how productive they are. |
| Profit and the Entrepreneur | Entrepreneurs are people who take the risks of organizing productive resources to make goods and services. Profit is an important incentive that leads entrepreneurs to accept the risks of business failure. |
| Growth | Investment in factories, machinery, new technology, and in the health, education, and training of people can raise future standards of living. |
| Role of Government | There is an economic role for government in a market economy whenever the benefits of a government policy outweigh its costs. Governments often provide for national defense, address environmental concerns, define and protect property rights, and attempt to make markets more competitive. Most government policies also redistribute income. |
| Using Cost/Benefit Analysis to Evaluate Government Programs | Costs of government policies sometimes exceed benefits. This may occur because of incentives facing voters, government officials, and government employees, because of actions by special interest groups that can impose costs on the general public, or because social goals other than economic efficiency are being pursued. |
| Macroeconomy—Income, Employment, Prices | A nation’s overall levels of income, employment, and prices are determined by the interaction of spending and production decisions made by all households, firms, government agencies, and others in the economy. |
| Unemployment and Inflation | Unemployment imposes costs on individuals and nations. Unexpected inflation imposes costs on many people and benefits some others because it arbitrarily redistributes purchasing power. Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices. |
| Monetary and Fiscal Policy | Federal government budgetary policy and the Federal Reserve System’s monetary policy influence the overall levels of employment, output, and prices. |

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<table>
<thead>
<tr>
<th>TCSS and/or TCTA Course</th>
<th>Traditional Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multimedia Design</td>
<td>Graphic Arts/Arts and Design</td>
</tr>
<tr>
<td>Multimedia Publications</td>
<td>Graphic Arts/Arts and Design</td>
</tr>
<tr>
<td>TASK</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>10. Develop interactive Web pages and store using a variety of multimedia.</td>
<td>Produce a deliverable of a work in progress.</td>
</tr>
<tr>
<td></td>
<td>Use various input tools to import visuals in a graphic designer.</td>
</tr>
<tr>
<td></td>
<td>Plan and design a graphic designer.</td>
</tr>
<tr>
<td></td>
<td>Create and edit a graphic using various software.</td>
</tr>
<tr>
<td></td>
<td>Design and maintain to create, modify, and enhance a graphic.</td>
</tr>
<tr>
<td></td>
<td>Demonstrate appropriate techniques using various software.</td>
</tr>
<tr>
<td></td>
<td>Utilize various input devices to create business and personal multimedia projects.</td>
</tr>
<tr>
<td></td>
<td>Demonstrate appropriate techniques associated with graphic design.</td>
</tr>
</tbody>
</table>

**FOR EMBEDDING ART/ART AND DESIGN**

**COMPARISON OF MULTIMEDIA DESIGN AND GRAPHIC ARTS/ART AND DESIGN**

<table>
<thead>
<tr>
<th>TASK</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Create works of art that communicate specific concepts, emotions, and information.</td>
<td>10016</td>
</tr>
<tr>
<td>2. Utilize a variety of input devices to display multimedia and interact with the viewer in creating projects.</td>
<td></td>
</tr>
<tr>
<td>3. Use a variety of software and equipment to create, modify, and analyze.</td>
<td></td>
</tr>
<tr>
<td>4. Develop and create multimedia projects.</td>
<td></td>
</tr>
<tr>
<td>5. Demonstrate appropriate techniques for using multimedia software.</td>
<td></td>
</tr>
<tr>
<td>6. Utilize a variety of input devices for multimedia production and design.</td>
<td></td>
</tr>
<tr>
<td>7. Apply interaction principles for importing scanning different graphics and tools.</td>
<td></td>
</tr>
<tr>
<td>8. Utilize a variety of tools to manipulate images.</td>
<td></td>
</tr>
<tr>
<td>FOR EMBEDDING ART CREDIT IN MULTIMEDIA DESIGN</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPARISON OF MULTIMEDIA DESIGN AND GRAPHIC ARTS/ART AND DESIGN</th>
</tr>
</thead>
</table>

1. Write an essay exploring the relationship between visual arts and multimedia design.

2. Apply knowledge of multimedia design to create a digital portfolio.

3. Analyze the impact of multimedia design on contemporary art and culture.

4. Demonstrate proficiency in using multimedia design software.

5. Create a multimedia design project that integrates visual arts and technology.

6. Utilize multimedia design to create engaging user interfaces.

7. Apply knowledge of multimedia design to create digital art installations.

8. Utilize multimedia design to create social media campaigns.

**Examples of multimedia design projects:**

- Create a stop-motion animation.
- Design a responsive website.
- Develop an interactive infographic.
- Produce a digital short film.
- Create a virtual reality experience.
- Design a multimedia exhibition.

**Skills required for success:**

- Problem-solving skills.
- Creative thinking.
- Attention to detail.
- Technical proficiency.
- Strong communication skills.

**Recommended courses:**

- Graphic Design
- Digital Video Production
- Interactive Media Design
- Multimedia Design
- Animation

**Recommended tools:**

- Adobe Creative Suite
- SketchUp
- After Effects
- Blender
- Final Cut Pro

**Future career opportunities:**

- Multimedia Designer
- Digital Artist
- Interactive Media Developer
- Video Editor
- Game Developer

**Related fields:**

- Graphic Design
- Video Production
- Digital Media
- Interactive Media
- Web Design
### Comparison of Multimedia Design and Graphic Arts/Art and Design

#### For Embedding Art Credit in Multimedia Design

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Multimedia Design</th>
<th>Graphic Arts/Art and Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain differences in multimedia and traditional media.</td>
<td>Understands the role of multimedia in modern society and its impact on communication, education, and entertainment.</td>
<td>Understands the role of traditional media in history, culture, and society.</td>
</tr>
<tr>
<td>2. Utilizes basic design principles in multimedia projects.</td>
<td>Designs multimedia projects that incorporate principles of balance, contrast, and harmony.</td>
<td>Designs traditional media projects that incorporate principles of balance, contrast, and harmony.</td>
</tr>
<tr>
<td>3. Analyzes and evaluates the effectiveness of multimedia in multiple uses.</td>
<td>Evaluates the effectiveness of multimedia in various contexts such as marketing, education, and entertainment.</td>
<td>Evaluates the effectiveness of traditional media in various contexts such as journalism, advertising, and entertainment.</td>
</tr>
<tr>
<td>4. Understands the role of multimedia in education.</td>
<td>Understands how multimedia can be used to enhance learning and teaching.</td>
<td>Understands how traditional media can be used to enhance learning and teaching.</td>
</tr>
<tr>
<td>5. Understands multimedia production software.</td>
<td>Uses multimedia production software to create interactive experiences.</td>
<td>Uses software tools to create visual content.</td>
</tr>
<tr>
<td>7. Designs multimedia projects that incorporate video, audio, and text.</td>
<td>Designs multimedia projects that incorporate video, audio, and text to create engaging and interactive experiences.</td>
<td>Designs traditional media projects that incorporate video, audio, and text to create engaging and interactive experiences.</td>
</tr>
<tr>
<td>8. Designs multimedia projects that incorporate animation and interactivity.</td>
<td>Designs multimedia projects that incorporate animation and interactivity to enhance user experience.</td>
<td>Designs traditional media projects that incorporate animation and interactivity to enhance user experience.</td>
</tr>
<tr>
<td>9. Designs multimedia projects that incorporate social and cultural issues.</td>
<td>Designs multimedia projects that incorporate social and cultural issues to raise awareness and promote social change.</td>
<td>Designs traditional media projects that incorporate social and cultural issues to raise awareness and promote social change.</td>
</tr>
<tr>
<td>10. Designs multimedia projects that incorporate technology and creativity.</td>
<td>Designs multimedia projects that incorporate technology and creativity to create innovative and engaging experiences.</td>
<td>Designs traditional media projects that incorporate technology and creativity to create innovative and engaging experiences.</td>
</tr>
<tr>
<td>11. Designs multimedia projects that incorporate multimedia storytelling.</td>
<td>Designs multimedia projects that incorporate multimedia storytelling to engage audiences and convey messages effectively.</td>
<td>Designs traditional media projects that incorporate multimedia storytelling to engage audiences and convey messages effectively.</td>
</tr>
<tr>
<td>12. Designs multimedia projects that incorporate multimedia production.</td>
<td>Designs multimedia projects that incorporate multimedia production techniques and tools.</td>
<td>Designs traditional media projects that incorporate multimedia production techniques and tools.</td>
</tr>
<tr>
<td>13. Designs multimedia projects that incorporate multimedia aesthetics.</td>
<td>Designs multimedia projects that incorporate multimedia aesthetics to create visually appealing and engaging experiences.</td>
<td>Designs traditional media projects that incorporate multimedia aesthetics to create visually appealing and engaging experiences.</td>
</tr>
<tr>
<td>14. Designs multimedia projects that incorporate multimedia interaction.</td>
<td>Designs multimedia projects that incorporate multimedia interaction to create interactive and responsive experiences.</td>
<td>Designs traditional media projects that incorporate multimedia interaction to create interactive and responsive experiences.</td>
</tr>
<tr>
<td>15. Designs multimedia projects that incorporate multimedia evaluation.</td>
<td>Designs multimedia projects that incorporate multimedia evaluation to assess the effectiveness and impact of multimedia content.</td>
<td>Designs traditional media projects that incorporate multimedia evaluation to assess the effectiveness and impact of multimedia content.</td>
</tr>
<tr>
<td>16. Designs multimedia projects that incorporate multimedia sustainability.</td>
<td>Designs multimedia projects that incorporate multimedia sustainability to create environmentally friendly and socially responsible content.</td>
<td>Designs traditional media projects that incorporate multimedia sustainability to create environmentally friendly and socially responsible content.</td>
</tr>
</tbody>
</table>

By embedding credit in multimedia design, students can gain a deeper understanding of the role of multimedia in modern society and develop skills in a range of multimedia production techniques and tools.
<table>
<thead>
<tr>
<th>Multimediaplications</th>
<th>Art and Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Create interactive media projects that utilize various technologies.</td>
<td>1. Identify multimedia composition, graphic design, and multimedia art and design.</td>
</tr>
<tr>
<td>2. Design multimedia projects that utilize various technologies.</td>
<td>2. Produce a theme-related invitational show of work.</td>
</tr>
<tr>
<td>3. Create immersive media projects that utilize various technologies.</td>
<td>3. Choose appropriate multimedia projects for a work of art or design.</td>
</tr>
</tbody>
</table>

**MULTIMEDIA APPLICATIONS**

**Art and Design**

<table>
<thead>
<tr>
<th>Multimedia</th>
<th>Art and Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produce a theme-related invitational show of work.</td>
<td>1. Identify multimedia composition, graphic design, and multimedia art and design.</td>
</tr>
<tr>
<td>Design multimedia projects that utilize various technologies.</td>
<td>2. Produce a theme-related invitational show of work.</td>
</tr>
<tr>
<td>Create immersive media projects that utilize various technologies.</td>
<td>3. Choose appropriate multimedia projects for a work of art or design.</td>
</tr>
</tbody>
</table>
| Lesson and themes | Multimedia: Combine visual, audio, and animation to create interactive experiences.
|-------------------|----------------------------------------------------------------------------------|
| 1. Explain purpose, function, and meaning of selected works of art or media. | 6. Analyze images for visual, spatial, and functional differences.
| 2. Demonstrate effective selection of works of art from various cultures, periods, and traditions. | 7. Explain purpose, function, and meaning of selected works of art or media.
| 3. Create interactive multimedia projects that utilize various technology. | 8. Demonstrate effective selection of works of art from various cultures, periods, and traditions.
| 4. Demonstrate independent research to support work. | 9. Create and edit a multimedia presentation.
| 5. Demonstrate effective selection of works of art from various cultures, periods, and traditions. | 10. Create and edit a multimedia presentation.
<p>| 11. Describe changes in multimedia over time, including supplemental texts. | 11. Describe changes in multimedia over time, including supplemental texts. |</p>
<table>
<thead>
<tr>
<th><strong>Comparison of Multimedia Publications and Graphic Arts/Art and Design</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Describe changes in photography over time, including equipment, ideas, and society.</td>
</tr>
<tr>
<td>12. Compare modes of artistic expression used in art and other academic fields.</td>
</tr>
</tbody>
</table>

**Key Elements**

- Cliché, iconography, and symbolism
- Opposition of man and nature in landscape and still life
- Emphasis on Japanese or Chinese calligraphy and ornamentation
- Materials and tools used in production
- Themes and motifs
- Experimentation with different styles and techniques

| 13. Describe characteristics of works of art that are common in a cultural context. |

**Issues and Themes**

- 4. Organize research about art, culture, history, and philosophy through the product or presentation of a digital or print work.
<table>
<thead>
<tr>
<th>TCSS and/or TCTA Course</th>
<th>Traditional Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternating Current and Direct Current OR</td>
<td>Algebraic Connections</td>
</tr>
<tr>
<td>Electrical Technologies I</td>
<td>Physical Science</td>
</tr>
<tr>
<td>Alternating Current and Direct Current OR</td>
<td></td>
</tr>
<tr>
<td>Electrical Technologies</td>
<td></td>
</tr>
<tr>
<td>Introduction to Robotics</td>
<td>Physics</td>
</tr>
<tr>
<td>Mathematics, Grade 9-12, Algebra, Conic Sections</td>
<td>Alternating Current and Direct Current</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>1. Create algebraic models for application-based problems by developing and solving equations and inequalities, including those involving direct, inverse, and joint variation.</td>
<td>AC7. Solve problems in electrical circuits using Ohm's Law, including voltage, current, impedance, and power.</td>
</tr>
<tr>
<td>2. Solve application-based problems by developing and solving systems of linear equations and inequalities.</td>
<td>AC11. Analyze filter circuits to determine electrical values, including hi-pass, low-pass, band pass, and band stop.</td>
</tr>
<tr>
<td>3. Use formulas or equations of functions to calculate outcomes of exponential growth or decay.</td>
<td>DC12. Solve problems in electrical series, parallel, and combination circuits using Ohm's law to determine voltage, current, resistance, and power.</td>
</tr>
<tr>
<td>4. Determine maximum and minimum values of a function using linear programming procedures.</td>
<td>AC7. Solve problems in electrical circuits using Ohm's Law, including voltage, current, impedance, and power.</td>
</tr>
<tr>
<td>5. Determine approximate rates of change of nonlinear relationships from graphical and numerical data.</td>
<td>AC11. Analyze filter circuits to determine electrical values, including hi-pass, low-pass, band pass, and band stop.</td>
</tr>
<tr>
<td>6. Use the extreme value of a given quadratic function to solve applied problems.</td>
<td>AC10. Solve resistive-capacitive-inductive circuits.</td>
</tr>
<tr>
<td>7. Use analytical, numerical, and graphical methods to make financial and economic decisions, including those involving banking and investments, insurance, personal budgets, credit purchases, recreation, and deceptive and fraudulent pricing and advertising.</td>
<td>AC4. Explain electrical quantities, including frequency, impedance, power, capacitance, inductance, voltage, current, watts, and periods. Example: Understanding these quantities to make effective household power budgets and making an effective quote for a business.</td>
</tr>
<tr>
<td>9. Analyze aesthetics of physical models for line symmetry, rotational symmetry, or the golden ratio.</td>
<td>AC1. Explain electrical terms, including alternating current, frequency, period, sine wave, capacitance, and inductance. Example: Show the relationship of positive and negative voltage on a sine wave in AC. Show the symmetry between the average and peak voltages in both positive and negative voltages.</td>
</tr>
<tr>
<td>10. Critique measurements in terms of precision, accuracy, and approximate error.</td>
<td>AC5. Measure electrical units, including volts, amperes, ohms, and hertz. DC7. Explain electrical quantities and units of measure, including voltage, current, resistance, and power.</td>
</tr>
</tbody>
</table>
| 11. Use ratios of perimeters, areas and volumes of similar figures to solve applied problems | AC6. Determine electrical quantities utilizing test equipment, including volts, frequency and period, amperes and power.  
DC7. Determine electrical quantities of volts, ohms, and amperes utilizing appropriate test equipment.  
Example: Use a blueprint to determine the amount of wire that need to be run in a house with the determined electrical quantities. |
| 12. Create a model of a set of data by estimation the equation of a curve of best fit from tables of values or scatter plots. | AC12. Demonstrate troubleshooting techniques for evaluation reactive circuits.  
DC14. Demonstrate troubleshooting techniques for circuits, including opens, shorts, and grounds.  
Example: Create a set of possible fixes and costs for an electrical problem based off of data gathered while troubleshooting. |
<table>
<thead>
<tr>
<th>Science, Grade 9-12, Physical Science</th>
<th>Architecture and Construction (2009), Grades 9-12, Direct Current and Alternating Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Recognize periodic trends of elements, including the number of valence electrons, atomic size, and reactivity.</td>
<td>DC1.) Identify structure and characteristics of the atom.</td>
</tr>
<tr>
<td>2.) Identify solutions in terms of components, solubility, concentration, and conductivity.</td>
<td>DC2.) Explain the relationship of the atom to an electrical charge, including electrostatic field and law of charges.</td>
</tr>
<tr>
<td>3.) Contrast the formation of ionic and covalent bonds based on the transfer or sharing of valence electrons.</td>
<td>DC2.) Explain the relationship of the atom to an electrical charge, including electrostatic field and law of charges.</td>
</tr>
</tbody>
</table>
| 4.) Use nomenclature and chemical formulas to write balanced chemical equations. | DC3.) Identify sources of electricity, including chemical, mechanical, and solar.  
Examples: chemical—battery  
- mechanical—generator |
| 5.) Describe physical and chemical changes in terms of endothermic and exothermic processes. | DC3.) Identify sources of electricity, including chemical, mechanical, and solar.  
Examples: chemical—battery  
- mechanical—generator |
<p>| 6.) Identify characteristics of gravitational, electromagnetic, and nuclear forces. | DC3.) Identify sources of electricity, including chemical, mechanical, and solar. |
| 7.) Relate velocity, acceleration, and kinetic energy to mass, distance, force, and time. | AC7.) Solve problems in electrical circuits using Ohm's law, including voltage, current, impedance, and power. |
| 8.) Relate the law of conservation of energy to transformations of potential energy, kinetic energy, and thermal energy. | AC4.) Explain electrical quantities, including frequency, impedance, power, capacitance, inductance, voltage, current, watts, and periods. |
| 9.) Compare methods of energy transfer by mechanical and electromagnetic waves. | AC4.) Explain electrical quantities, including frequency, impedance, power, capacitance, inductance, voltage, current, watts, and periods. |
| 10.) Explain the relationship between electricity and magnetism. | AC3.) Explain terms and principles of electromagnetism, including permeability, retentively, and inductance. |
| 11.) Describe the nuclear composition of unstable isotopes and the resulting changes to their nuclear composition. | Through my partnership that was previously established, this will be covered by Alabama Power Company. This will be done through guest speakers, field trips, virtual field trips, etc. |
| 12.) Identify metric units for mass, distance, time, temperature, velocity, acceleration, density, force, energy, and power. | Through my partnership that was previously established, this will be covered by Alabama Power Company. This will be done through guest speakers, field trips, virtual field trips, etc. |</p>
<table>
<thead>
<tr>
<th>Science, Grade 9-12, Physics, 2005</th>
<th>Manufacturing (2009) Grades 9-12, Introduction to Robotics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.) Explain linear, uniform circular, and projectile motions using one- and two-dimensional vectors</td>
<td>I.R.15. Describe types of robot configurations, including revolute, Selective Compliant Assembly Robot Arm (SCARA), Cartesian, cylindrical, spherical, and jointed-arm.</td>
</tr>
<tr>
<td>2.) Define the law of conservation of momentum</td>
<td>I.R. 4. Explain the relationship of the atom to an electrical charge.</td>
</tr>
<tr>
<td>3.) Explain planetary motion and navigation in space in terms of Kepler's and Newton's laws.</td>
<td>I.R. 4. Explain the relationship of the atom to an electrical charge.</td>
</tr>
<tr>
<td>4.) Describe quantitative relationships for velocity, acceleration, force, work, power, potential energy, and kinetic energy.</td>
<td>I.R. 5. Explain electrical terms and units of measures, including direct and alternating current measured in amperes, voltage measured in volts, resistance measured in ohms, power measured in watts, and conductors and insulators.</td>
</tr>
<tr>
<td>5.) Explain the concept of entropy as it relates to heating and cooling, using the laws of thermodynamics.</td>
<td>We will be working collaboratively with the University of Alabama through field trips, guest speakers, etc. to cover this topic with the use of their new multimillion dollar facility and or expertise.</td>
</tr>
<tr>
<td>6.) Describe wave behavior in terms of reflection, refraction, diffraction, constructive and destructive wave interference, and the Doppler effect.</td>
<td>We will be working collaboratively with the University of Alabama through field trips, guest speakers, etc. to cover this topic with the use of their new multimillion dollar facility and or expertise.</td>
</tr>
<tr>
<td>7.) Describe properties of reflection, refraction, and diffraction.</td>
<td>We will be working collaboratively with the University of Alabama through field trips, guest speakers, etc. to cover this topic with the use of their new multimillion dollar facility and or expertise.</td>
</tr>
<tr>
<td>8.) Summarize similarities in the calculation of electrical, magnetic, and gravitational forces between objects.</td>
<td>I.R. 5. Explain electrical terms and units of measures, including direct and alternating current measured in amperes, voltage measured in volts, resistance measured in ohms, power measured in watts, and conductors and insulators.</td>
</tr>
<tr>
<td>9.) Describe quantitative relationships among charge, current, electrical potential energy, potential difference, resistance, and electrical power for simple series, parallel, or combination direct current (DC) circuits.</td>
<td>I.R. 5. Explain electrical terms and units of measures, including direct and alternating current measured in amperes, voltage measured in volts, resistance measured in ohms, power measured in watts, and conductors and insulators.</td>
</tr>
<tr>
<td>TCSS and/or TCTA Course</td>
<td>Traditional Course</td>
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<tr>
<td>----------------------------------------</td>
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<tr>
<td>Emergency Medical Services</td>
<td>Health</td>
</tr>
<tr>
<td>Principles of Public Service</td>
<td>P.E.</td>
</tr>
<tr>
<td>Introduction to Fire Science</td>
<td>LIFE</td>
</tr>
<tr>
<td>Analyze technology for its influence on consumer health and health care.</td>
<td>The EMT curriculum doesn't specifically address technology but the curriculum itself evolves with technology as it relates to documentation and patient care.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Describe ways to advocate for a healthy environment.</td>
<td>Not specifically addressed but can easily be integrated.</td>
</tr>
<tr>
<td>Describe global environmental issues.</td>
<td>The EMT Basic Curriculum addresses specific environmental issues as it relates to EMS.</td>
</tr>
<tr>
<td>Identify personal, financial, and legal responsibilities of parenthood.</td>
<td>Lesson 4-9 Obstetrics/Gynecology Reviews the anatomical and physiological changes that occur during pregnancy, demonstrate normal and abnormal deliveries, summarize signs and symptoms of common gynecological emergencies, and neonatal resuscitation.</td>
</tr>
<tr>
<td>Identify common causes of disability and premature death</td>
<td>Lesson 4-2 Respiratory Emergencies Reviews components of the lesson on respiratory anatomy and physiology. It will also provide instruction on assessment of respiratory difficulty and emergency medical care of respiratory problems, and the administration of prescribed inhalers.</td>
</tr>
<tr>
<td>Demonstrate CPR and automated external defibrillator (AED) techniques and other first aid skills</td>
<td>Lesson 4-3 Cardiovascular Emergencies Reviews of the cardiovascular system, an introduction to the signs and symptoms of cardiovascular disease, administration of a patient’s prescribed nitroglycerin, and use of the automated external defibrillator.</td>
</tr>
<tr>
<td>Recognize personal responsibility for lifelong health.</td>
<td>Throughout the course</td>
</tr>
<tr>
<td>Describe life events that impact mental and emotional health.</td>
<td>Lesson 1-2 Well-Being of the EMT-Basic Covers the emotional aspects of emergency care, stress management, introduction to Critical Incident Stress Debriefing (CISD), scene safety, body substance isolation (BSI), personal protection equipment (PPE), and safety precautions that can be taken prior to performing the role of an EMT-Basic.</td>
</tr>
<tr>
<td>Analyze social and cultural messages about food and eating for their influence on nutrition choices.</td>
<td>Although nutrition is not specifically addressed in the curriculum, it is thoroughly discussed in multiple chapters.</td>
</tr>
<tr>
<td>Identifying factors that impact nutrition choices, including procurement, cost and food preparation time.</td>
<td>Lesson 4-4 Diabetes/Altered Mental Status Reviews of the signs and symptoms of altered level of consciousness, the emergency medical care of a patient with signs and</td>
</tr>
<tr>
<td>Topic</td>
<td>Lesson</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Describe prevention and management strategies for acute and chronic health conditions.</td>
<td>Lesson 4-4 Diabetes/Altered Mental Status Reviews of the signs and symptoms of altered level of consciousness, the emergency medical care of a patient with signs and symptoms of altered mental status and a history of diabetes, and the administration of oral glucose.</td>
</tr>
<tr>
<td>Explain prevention methods for communicable diseases and infections.</td>
<td>Lesson 1-2 Well-Being of the EMT-Basic Covers the emotional aspects of emergency care, stress management, introduction to Critical Incident Stress Debriefing (CISD), scene safety, body substance isolation (BSI), personal protection equipment (PPE), and safety precautions that can be taken prior to performing the role of an EMT-Basic.</td>
</tr>
<tr>
<td>Explain the progression of HIV infection to AIDS.</td>
<td>Lesson 1-2 Well-Being of the EMT-Basic Covers the emotional aspects of emergency care, stress management, introduction to Critical Incident Stress Debriefing (CISD), scene safety, body substance isolation (BSI), personal protection equipment (PPE), and safety precautions that can be taken prior to performing the role of an EMT-Basic.</td>
</tr>
<tr>
<td>Interpret federal, state, and local laws as they relate to the purchase, sale, use, and possession of alcohol, tobacco, and drugs.</td>
<td>Lesson 4-6 Poisoning/Overdose Teaches the student to recognize the signs and symptoms of poisoning and overdose. Information on the administration of activated charcoal is also included in this section. Additional information could be added to satisfy this objective.</td>
</tr>
<tr>
<td>Identify effects on health and behavior regarding the use of chemical substances including prescription drugs, over-the-counter drugs, illegal drugs, alcohol and tobacco.</td>
<td>Lesson 4-6 Poisoning/Overdose Teaches the student to recognize the signs and symptoms of poisoning and overdose. Information on the administration of activated charcoal is also included in this section. Additional information could be added to satisfy this objective.</td>
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<td>Lesson 4-6 Poisoning/Overdose Teaches the student to recognize the signs and symptoms of poisoning and overdose. Information on the administration of activated charcoal is also included in this section. Additional information could be added to satisfy this objective.</td>
</tr>
</tbody>
</table>
**Demonstrates complex movement patterns in a variety of activity settings.**

This event is designed to simulate the critical task of searching for a fire victim with limited visibility in an unpredictable area. This event challenges the candidate's aerobic capacity, upper body muscular strength and endurance, agility, balance, anaerobic endurance, and kinesthetic awareness. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: muscles of the chest, shoulder, triceps, quadriceps, abdomen, and lower back.

**EVENT**

During this event, the candidate crawls on hands and knees through a tunnel maze that is approximately 3 feet (91.44 cm) high, 4 feet (121.92 cm) wide and 64 feet (19.51 m) in length with two 90° turns. At a number of locations in the tunnel, the candidate navigates around, over and under obstacles. In addition, at two locations, the candidate crawls through a narrowed space where the dimensions of the tunnel are reduced.

The movement is monitored/listened to as the candidate advances through the maze. If for any reason, the candidate chooses to end the event, the candidate calls out or raps sharply on the wall or ceiling and the candidate is then assisted out. Upon exit from the maze, the event is concluded. The candidate walks 85 feet (25.91 m) within the established walkway to the next event.

**Apply movement concepts and fitness principles to a variety of physical activity settings.**

This event is designed to simulate the critical task of removing a victim or injured partner from a fire scene. This event challenges the candidate's aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, trapezius, deltoids, tateus mus, biceps, and muscles of the forearm and hand (grip).

**EVENT**

This event is designed to simulate the critical task of breaching and pulling down a ceiling to check for fire extension.

During this event, the candidate removes the pike pole from the bracket, stands within the boundary established by the equipment frame, and places the tip of the pole on the painted area of the hinged door in the ceiling. The candidate fully pushes up the 60-lb hinged door in the ceiling with the pike pole three times. The candidate then...
hooks the pike pole to the 80-lb ceiling device and pulls the pole down five times. Each set consists of three pushes and five pulls. The candidate repeats the set four times. The candidate is permitted to stop and, if needed, adjust the grip. Releasing the grip or slipping from pike pole handle, without the pike pole falling to ground, does not result in a warning or constitute a failure. The candidate may re-establish the grip and resume the event. If the candidate does not successfully complete a repetition (i.e., complete the up and down motion), the proctor calls out “MISS” and the candidate must push or pull the apparatus again to complete the repetition. The event and the total test time ends when the applicant completes the final pull stroke repetition as indicated by the proctor who calls out “TIME”.

<table>
<thead>
<tr>
<th>Analyze physical activity, sport, and recreations practices for safety, risks, and consequence.</th>
<th>General Safety Tips While Performing Resistance Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Always lift with a partner.</td>
</tr>
<tr>
<td></td>
<td>Ask for help from an expert if you don’t know what you are doing.</td>
</tr>
<tr>
<td></td>
<td>Progress slowly to avoid injuries.</td>
</tr>
<tr>
<td></td>
<td>Never show off by attempting to lift more weight than you normally lift.</td>
</tr>
<tr>
<td></td>
<td>Use proper lifting technique when lifting weight plates and dumbbells.</td>
</tr>
<tr>
<td></td>
<td>Never drink alcohol or take medications that may cause drowsiness prior to lifting weights.</td>
</tr>
<tr>
<td></td>
<td>Do not lift too quickly; always control the weights.</td>
</tr>
<tr>
<td></td>
<td>Always use strict form. Proper technique is more important than the amount of weight lifted.</td>
</tr>
<tr>
<td></td>
<td>Keep head in a neutral position, looking straight ahead and not upwards or downwards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Use competence, proficiency, and strategy skills to solve problems in a physical education environment.</th>
<th>This event is designed to simulate the critical task of breaching and pulling down a ceiling to check for fire extension.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This event challenges the candidate’s aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, deltoids, trapezius, triceps, biceps, and muscles of the forearm and hand (grip).</td>
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2
| Evaluate facilities, and programs within the community that may be utilized for maintaining lifelong fitness. | Cardiopulmonary Endurance Program  
Cardiopulmonary endurance is the ability of the cardiovascular and respiratory systems to deliver oxygen to working muscles. It consists of both aerobic and anaerobic energy systems. |
|---|---|
| Identify characteristics of a responsible leader, including honesty, respect for others, and self-control, in a physical education activity. | PRACTICE SESSIONS  
Fire departments utilizing the CPAT shall also ensure that all candidates have full and equal opportunity to perform at least two (2) timed practice runs, using actual CPAT apparatus and completing the entire course. These mandatory practice sessions shall occur within thirty (30) days of the official test date. Again, Certified Peer Fitness Trainers, fitness professionals and/or CPAT-trained fire fighters (proctors) shall help the candidates understand the test elements and how they can improve their performance and conditioning. |
| Interpret research regarding social effects associated with engaging in physical activity with others. | Not addressed within the curriculum but can be added in the same format as local high schools. |
| Demonstrate independence and self-responsibility in student-led physical activities | PRACTICE SESSIONS  
Fire departments utilizing the CPAT shall also ensure that all candidates have full and equal opportunity to perform at least two (2) timed practice runs, using actual CPAT apparatus and completing the entire course. These mandatory practice sessions shall occur within thirty (30) days of the official test date. Again, Certified Peer Fitness Trainers, fitness professionals and/or CPAT-trained fire fighters (proctors) shall help the candidates understand the test elements and how they can improve their performance and conditioning. |
| Demonstrate the level of fitness required for successful participation in a variety of physical activities. | Interval Training  
Interval training involves a repeated series of exercise activities interspersed with rest or recovery periods. This is an excellent tool for improving both aerobic and anaerobic endurance. In this program running intervals are performed on Tuesdays and Thursdays. It is important that interval days be at least one day of slow easy running between them. This provides the recovery necessary to prevent over training. |
| Describe personal goals implemented in an individualized physical fitness performance plan. | PRACTICE SESSIONS  
Fire departments utilizing the CPAT shall also ensure that all candidates have full and equal opportunity to perform at least two (2) timed practice runs, using actual CPAT apparatus and completing the entire course. These mandatory practice sessions shall occur within thirty (30) days of the official test date. Again, Certified Peer Fitness Trainers, fitness professionals and/or CPAT-trained fire fighters (proctors) shall help the candidates understand the test elements and how they can improve their performance and conditioning. |
Candidate Physical Ability Test
SECOND EDITION
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**CHAPTER 2** Mentoring and Preparing Physically Qualified Candidates  
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PREFACE

HISTORICAL BACKGROUND
When the IAFF/IAFC Joint Labor Management Wellness-Fitness Initiative Task Force (WFI Task Force) first met in December 1996, the WFI Task Force agreed, in part, to address the issue of physical performance in the fire service. The resulting Candidate Physical Ability Test Program (CPAT) was developed to provide fire departments with a tool that would enable them to select inherently physically capable individuals to be trained as firefighters.

INCUMBENT EVALUATIONS
The mission of the WFI Task Force is to enhance the medical, fitness, and behavioral health; medical and fitness rehabilitation; and wellness-fitness data collection of the fire service. The WFI Task Force has maintained that incumbent performance testing is inappropriate for implementation within WFI Task Force department's and the fire service as a whole. However, before any fire department makes a local decision to implement incumbent testing it must have an adequate support system in place to keep uniformed personnel capable of safely performing fire operation tasks during their entire career. The members of the WFI Task Force have concluded that before an incumbent physical ability test is developed and implemented the fire department must:

- Incorporate the WFI into company level training;
- Provide medical clearance;
- Establish a rehabilitation program for training, fitness, and medical rehabilitation;
- Provide for reevaluation and return to duty or extended light duty or alternative duty of fire fighters during rehabilitation; and
- Establish an internal quality assurance program to review fire department programs (operations, training, fitness and/or wellness) that may be deficient.

Furthermore, the WFI Task Force reiterates its position that the failure of an incumbent fire fighter demonstrates the fire department’s (including labor, management and the individual) inability to prepare and/or maintain uniformed personnel’s training skill and conditioning to perform job-specific functions required for fire department operations.

The WFI Task Force will evaluate pilot projects of incumbent evaluation in fire departments that are members of the Task Force. These fire departments doing this evaluation have met the above conditions and will share their results and data with the WFI Task Force for future considerations.

It is a violation of the CPAT license and the CPAT copyright to use the CPAT test for any incumbent testing.

TECHNICAL COMMITTEE
The WFI Task Force retains a technical committee comprised of the IAFF, the IAFC and subject matter experts from each of the ten jurisdictions. The technical committee members include labor officials, fire fighters, line officers, training officers, physicians, kinesiologists, attorneys, and exercise physiologists. Women and racial minorities were represented among these members. The committee was further advised by expert consultants in the fields of labor and employment law, industrial psychology, and psychometrics. The technical committee was instructed to develop a test that would measure a candidate’s physical ability to perform the critical tasks of a fire fighter.
WHAT DOES THE CANDIDATE PHYSICAL
ABILITY TESTING PROGRAM INCLUDE?

The WFI Task Force's goal was to develop a fair evaluation
system in the selection of fire fighters to ensure that all fire
fighter candidates possess the physical ability to complete
critical tasks effectively and safely. WFI's CPAT project has
seven major components:
- Recruiting a Diverse Candidate Pool
- Mentoring and Preparing Physically Qualified Candid-
ates
- Validating CPAT for Your Department
- Orientation & Practice Sessions
- CPAT Description
- Test Administration
- Data Collection

This CPAT was developed to allow a fire department to
fairly obtain a diverse pool of candidates who are physically
capable of performing the tasks required in recruit
school.

This 2nd edition reflects the experiences of U.S. and Can-
dian fire departments in implementing the comprehensive
CPAT fire program.

In 2006, the following orientation and pre-test procedures
were implemented after a conciliation agreement with the
US Equal Employment Opportunity Commission
(EEOC):

All candidates will attend at least two mandatory orienta-
tion sessions commencing within eight weeks before the
actual official CPAT test date, during which they will re-
cieve "hands on" familiarity with the actual CPAT appar-
tus. Candidates may voluntarily attend up to one
additional orientation session.

Within 30 days prior to the actual CPAT test date, all can-
didates will perform at least 2 timed practice runs, using
actual CPAT apparatus, and in which the candidate is al-
lowed to take as much time as necessary to complete the
entire course.

A candidate may waive all of the fore-mentioned program
components and be eligible to participate in a CPAT test.
Such a waiver shall only be acceptable if it is in writing,
and is made on a wholly knowing and voluntary basis.

During the orientations and practice runs certified Peer
Fitness Trainers, fitness professionals and/or CPAT trained
fire fighters (proctors) will be present to help all candidates
understand the test elements and how they can improve
their physical performance and conditioning prior to tak-
ing the test.

A complete copy of this conciliation agreement may be
found in Appendix F.

Further, the WFI Task Force now requires that all those
that are licensed to use the CPAT must fully implement
these orientation and pre-test procedures. For those fire
departments that are utilizing another Licensee to conduct
their CPAT, the fire department, as the employer, must en-
sure that these changes are incorporated.

Through the CPAT licensing agreement, all licensees have
agreed to provide the IAFF with data on candidate CPAT
performance. To facilitate the collection of such data, the
IAFF has developed and has now provided to each licensee
a secure web-based data collection and reporting system
for CPAT entitled the CPAT Administrator. As a condition
of continued licensure, all licensees shall now use this pro-
gram and report to the IAFF database on an annual basis.
This information will be provided in a redacted format,
which will keep the employer identity confidential, to the
US EEOC.

It is the hope of the WFI Task Force that this manual clarifies
any issues included in the first edition and improves upon this
already very successful program.
CHAPTER 1
RECRUITING A DIVERSE CANDIDATE POOL

WHY IS HAVING A DIVERSE FIRE DEPARTMENT IMPORTANT?
In today's society, communities are increasingly diverse and fire fighters are continually challenged to operate in multicultural environments. The fire department should reflect the community it serves. The goal of the CPAT is to test for those who are physically prepared to be trained to perform the job of fire fighter. The CPAT cannot be separated from the department's broader goal of attaining a properly trained and physically capable workforce whose members reflect the diversity of the community. Diversity should never be come by lowering validated entry standards. Rather, it should come from actively recruiting qualified men and women candidates from all racial and ethnic backgrounds for careers in the fire service.

The required job skills of the modern fire fighter are complex. In one shift, today's fire fighters may extinguish working fires, mitigate a hazardous materials incident, provide emergency medical care to an adolescent victim, and support the grieving spouse of a dying patient. In addition, fire fighters must interact frequently with community members during routine pre-fire inspections, community events, and school presentations. In order to accomplish these tasks successfully, it is necessary to have a well rounded, competent workforce made up of both genders to include all races and ethnic backgrounds.

In the past, many departments have incorrectly assumed that all types of people would be attracted to the fire service because of the nature of the job and its many benefits. These false assumptions have resulted in a workforce that is less than diverse, and in some cases have led to lawsuits, court orders, and consent decrees. This cycle of judicial order and reactive action takes control of the recruitment and hiring process out of the fire department's hands.

Proactively recruiting protected groups year-round is the best method of attracting qualified and diverse applicants. This approach reflects the fact that many protected groups have not had adequate exposure to the requirements and rewards of the job of a fire fighter. The goal of targeted recruiting is to select and retain the most qualified applicants while obtaining a diverse workforce. Successful recruiting ensures that a fire department will have a large pool of applicants to include a racial and ethnically-mixed group of men and women.

SUGGESTED WAYS TO RECRUIT
There is no one way to target qualified, diverse fire fighter applicants. Fire department officials should remember that successful recruiting is not limited to the period of time before the examination is administered. They must also recognize that fire fighters "self-recruit," by attracting others who are like them in race, ethnicity, or gender. Fire departments should target recruiting towards underrepresented groups reflected within their community. This will help to broaden the applicant pool. Such recruiting encourages those who might not otherwise apply because they were either unaware of the opportunity or not familiar with the outstanding career that firefighting provides. There are many recruitment strategies that can be used by fire departments to develop and expand their recruitment efforts.

INTERNAL ACTIONS
A productive recruitment drive is just part of what it takes to increase diversity in the fire department. For recruitment to be effective, managers must establish a positive climate within the department before encouraging members of a diverse community to become fire fighters. Fire departments must also begin to recognize, and take advantage of, the recruitment impact of most of their public activities. Expanding the concept of recruitment will make the recruitment drive itself more successful and will increase the likelihood that minorities who are recruited will actually become fire fighters.

The skills and dedication of the people working in the recruitment unit, the creativity that goes into designing the program and the verbal, logistical and financial backing given to the effort by top management, all play important parts in the success of your department's recruitment effort. All of this effort and investment must be supported. If other aspects of the department give out a conflicting message, or if the department is unprepared for a workforce that includes minorities, much of the recruitment effort will have been wasted.

Assess the department climate with respect to change in the workforce. Review department policies and facilities, and make changes where appropriate. Are the policies suitable for all? If a problem does occur, do employees know how to use the system to correct it, and do they trust the system to be fair, speedy and confidential? Are fire stations suitable for the workforce that includes individuals who will be assigned there? Are training instructors chosen for their competence and knowledgeable about alternative techniques for physical tasks, and generally pos-
itive about training? Provide meaningful diversity training for all levels of the department, beginning with its top management. Provide training for all department members in communications skills and conflict resolution. These seemingly irrelevant skills contribute significantly to workforce harmony. Therefore it is strongly recommended that organizations implement programs such as mentoring and peer mediation.

COMMUNITY OUTREACH

Any event where members of the community assemble is an opportunity for the fire department to recruit new applicants and to inform the public about its commitment to hiring a qualified workforce that reflects the diversity of the community. Events may include state fairs, county fairs, health fairs, races and other athletic events, churches, community colleges, barber shops, beauty salons, local social events and fund drives. In addition, an ongoing awareness program of public speaking, educational, and other opportunities to include women and minority fire fighters in community outreach will reinforce recruitment efforts made prior to the examination.

In many communities, the firehouse remains an icon of the neighborhood. Parents bring their children to the firehouse to meet the men and women who protect them, and groups, such as the scouts and school children, come to learn about the job. An open house not only provides a unique opportunity for the fire department to showcase its diversity, but also serves as an opportunity to recruit members from the community it serves and whose population the fire department seeks to reflect.

COMMUNITY ORGANIZATIONS AND PARTNERSHIPS

Individuals involved in the recruitment program may come from various areas. This may include fire fighters, non-suppression personnel and support staff from other fire departments or governmental agencies. One may consider community volunteers with human resource abilities or qualified uniformed personnel if your department has few or no members that represent a diverse community.

Minority and women's organizations as well as organizations successful in their recruitment efforts are valuable sources of ideas and resources for recruiting, and can be used throughout the year to spread the word about the fire department's search for a qualified, diverse applicant pool. These groups may also be willing to assist with applicant training. Fire departments should identify helpful organizations, make contact with key individuals within these groups, and establish an ongoing dialogue about ways to diversify the fire department. These groups should be given pre-examination recruitment materials and asked to provide specific assistance and resources for pre-examination recruitment. Some of the following groups may be helpful.

Local ethnic, minority, and women's advocacy and employment groups

Local or regional offices of national organizations such as the National Association for the Advancement of Colored People (NAACP), the Urban League, National Organization of Women (NOW), and Wider Opportunities for Women (WOW)

Whatever the size of a department, utilization of all resources will maximize recruiting efforts. A recruitment program is very similar to a public education program. Modeling recruitment efforts after a public education curriculum may prove valuable. These types of efforts target audiences and present messages in a way the audience will understand and respond. Similar to the public information officer, the recruiter should possess skills that can be useful in designing and distributing press releases and obtaining media coverage for recruitment events.

The use of community volunteers to distribute literature and network with various community groups provides another means mechanism of recruitment. This fosters relationships within the community and may help to carry the message of recruitment. As an example, small departments with limited budgets may also be able to find people who will donate their professional skills to design brochures, print flyers or make public service announcements. Local businesses may donate all or part of the cost for printing literature and posters for a recruitment drive. Local educational facilities may allow students to work on the development, the production or the editing of a project for school credit. Cable television companies may provide video equipment, editing facilities and a wide viewing audience. Fitness centers and gyms may be willing to offer discount memberships to fire fighter applicants preparing for the recruitment process.

THE INTERNET

The Internet is a valuable resource for learning about local organizations committed to improving job opportunities for females and minorities. Fire department officials may also wish to work with minority and women's groups within the department to help with recruitment efforts. A fire department's web site can provide information about the requirements to become an entry-level fire fighter and the department's commitment to a diverse workforce.
MEDIA
The media can also provide a significant ongoing opportunity through which the fire department can educate the public regarding the rewards and requirements of being a firefighter and the fire department's commitment to diversity. Fire departments should make use of radio and television, as well as newspapers and magazines with significant female or minority audiences. Fire departments can:

- Issue press releases announcing upcoming examinations, as well as the promotion of women and minorities within the department.
- Seek press coverage of firefighters and recruits, including feature stories on females and minorities who are progressing through the academy and who are serving as firefighters.
- Develop advertisements that feature women and minorities performing the duties of firefighters.
- Make use of free public service announcements, cable access programs and other low or no cost opportunities to promote diversity.

BROCHURES AND PUBLIC ANNOUNCEMENTS
Fire departments should ensure that posters, brochures, and other recruitment information illustrating the diversity of the fire department are visible and available to female and minorities. Fire departments should consider distribution of recruitment materials to:

- Minority neighborhoods, churches and other community gathering places.
- Gyms and health clubs with predominantly minority or female memberships
- Social service organizations
- Businesses frequented by minorities and females
- Women's athletic clubs, teams and events
- Military personnel — active or recently discharged

COLLEGES AND HIGH SCHOOLS
Fire departments should develop and maintain contacts with middle schools, counselors and high school and college career placement officers in their community, advising their commitment to a fire department that reflects the community. Some colleges offer classes toward a degree in fire science; others may be willing to assist with pre-examination training. College athletic departments (including state, private and community colleges, universities, and junior colleges) have consistently provided many physically capable minority applicants. These applicants are often self-motivated, physically fit, and open to physical challenges.

Many colleges and high schools have career days where students can learn about future employment opportunities. These forums provide the fire department with a great opportunity to introduce the fire service as a career, especially for women and minorities who might not have considered fire fighting as a job possibility available to them.

APPLICATION AVAILABILITY
Fire departments should ensure that applications for entry-level firefighter positions are available in a number of locations throughout the area served by the fire department, particularly in areas with a high minority population and businesses and organizations frequented by minorities and females.

SUMMARY
It is the position of the IAFF/IAPC Joint Labor Management Wellness-Fitness Initiative Task Force that fire departments should increase the diversity of their workforce by actively recruiting candidates from throughout their communities rather than lowering candidate physical ability standards. As described in this chapter, fire departments can pursue many avenues to raise awareness of the job opportunities within the fire service before testing is administered.

CHAPTER 2
MENTORING AND PREPARING PHYSICALLY QUALIFIED CANDIDATES

A mentor is a positive role model with whom applicants can identify. Mentors demonstrate that men and women from any race, religion or ethnic group can perform the job of a fire fighter. A mentor can introduce the fire service as a noble profession and display the pride that being a fire fighter bestows.

Mentors can be utilized in many aspects of recruiting, including participating in recruiting sessions at colleges, high schools, community events, and open houses. In addition, mentors have been used by participating departments in the following ways:

- Support of cadet or explorer programs where future applicants (15 to 21 years old) participate in fire department activities to learn about the job
- Participation in bringing one’s child to work events
- Teaching fire fighter fitness and conditioning courses at community colleges
- Sponsoring and supporting athletic events for fire fighters at public venues

MENTOR

A mentor is defined as a trusted counselor or teacher, especially in the occupational setting. The goal of a mentor is not merely to get a candidate to pass the CPAT, but to prepare the candidate to be a successful member of the fire and rescue team.

It is also beneficial to maintain a diverse group of mentors. Candidates need to identify with a mentor to achieve maximal success in the program. Having a diverse group increases the chances of achieving that goal.

PHYSICAL TRAINING

The physical training component of a CPAT mentoring program is a key piece of the overall mentoring program. A fire department’s CPAT license mandates that eligible candidates have a minimum of eight weeks to familiarize themselves with the CPAT events and physically prepare for the test. The CPAT presents a multitude of physical demands and it is up to the mentor to adequately prepare candidates for all of these demands. A highly successful mentoring program will include elements of strength training, cardiovascular training, CPAT event-specific training and flexibility training. It is also important to remember that candidates will enter the mentoring program at varying physical levels. Therefore, training programs must adapt to the baseline ability level of each individual.

STRENGTH / CORE TRAINING

Strength training can encompass various types of resistance training — dumbbells, resistance machines, resistance bands, body weight training, etc. No matter which type of training is used the program should also include core training. Maximizing the strength of the core will significantly increase the force production capability and the neuromuscular efficiency of the extremities, thus improving overall strength.

It is important to note the principle of specificity of training. The more alike the training regimen is to the task being tested, the better the overlap to that task. Therefore, it is important to have training on the actual CPAT tasks including running the course in its entirety.

CARDIOVASCULAR TRAINING

All aspects of the CPAT challenge a candidate’s cardiovascular abilities. A mentoring program would be incomplete without some type of cardiovascular training. Initially basic, timed cardiovascular activities are sufficient to build a cardiovascular base. To improve aerobic ability it is important to progress to higher intensity activities. An example would be interval training which requires the candidate to train for a short period at near maximal aerobic capacity followed by a period of sub-maximal activity.

FLEXIBILITY / RANGE OF MOTION

Initially, mentoring sessions should BEGIN with slow, dynamic stretching to warm up muscles and prepare connective tissues for activity. The sessions should END with static stretches to elongate contracted muscle fibers.

TOTAL INTEGRATION

The physical component of a CPAT mentoring program is the most visible sign to the fire service candidate, however, it is equally important to impart the values that make the fire service great. Mental strength and confidence imparted upon a candidate from a mentor can give the candidate the internal drive necessary to help him or her begin a successful career in the fire service.

ADMINISTRATION

The depth of a fire department’s commitment to successful CPAT mentoring is reflected in the amount of time and resources allotted to their mentoring program. These efforts can come from within the department or if internal resources are not available outside sources can be used. The minimum requirements for a CPAT mentoring program are to make Peer Fitness trainers or active fire fighters available to candidates at their two orientation sessions and allow for two trial runs at the CPAT prior to the official test date. However, many departments have shown the efficacy of more in-depth mentoring programs that include the opportunity to meet with a peer fitness trainer up to four times per week for a period of up to 16 weeks.
CHAPTER 3
CPAT TRANSPORTABILITY AND LICENSING

In order for your department to utilize the CPAT, you must comply with the Uniform Guidelines on Employee Selection Procedures (1978). When the IAFP IAFC and the ten departments and their local union affiliates of the Joint Labor Management Wellness-Fitness Task Force decided to embark on the development of a physical ability test for fire service candidates, we were required to comply with these guidelines. Any fire department utilizing CPAT must validate that the CPAT is a suitable test for your jurisdiction.

The specific section in the Code of Federal Regulations (CFR) that applies to validating a test for one organization that was developed by another organization is found in 29 CFR 1607.7. This section of the Guidelines requires these organizations to provide evidence in three specific areas.

First, an employer must provide evidence that the selection procedure is valid.

Second, an employer must provide evidence of job similarity with the job on which the validity study was performed.

Third, an employer must provide evidence of test fairness. It is for this reason that departments are required to submit their CPAT results to the national database at the IAFP using the CPAT Administrator, the required CPAT data collection software.

TRANSPORTABILITY STUDY
Transportability studies are a routine part of the selection criteria adoption process. Most tests are developed with the assistance of a limited number of participants and then applied to additional participants after the initial development phase has been completed. In general, the goal of the transportability study is to demonstrate that the major work behaviors required of the participants in the initial test development are sufficiently similar to the major work behaviors required by other users of the selection criteria.

The steps to conduct an effective transportability study include:

- Selection of a transportability study leader
- Analysis of essential job duties required by the department
- Completion and analysis of the physicality and criticality surveys found in Appendix C
- Completion and analysis of the equipment survey found in Appendix C
- From this analysis, creation of a written job description
- Apply for licensure from the IAFP

Listed below are descriptions of each of these steps.

SELECTION OF A TRANSPORTABILITY STUDY LEADER
One person from within your department should be responsible for coordinating the implementation of the CPAT for your fire department. The individual designated as the leader of the transportability study should be someone who is familiar with CPAT protocols and has good administrative and communication skills.

The leader of the transportability study is responsible for ensuring all parts of the transportability study remain in their possession and the transportability study is administered exactly as the instructions are written. Securing the data is essential to ensuring the study is valid and accurately reflects the opinions and practices of the department's personnel.

JOB ANALYSIS
Performing the job analysis is the basis for the transportability study. In order to accurately perform the job analysis, you will have to perform several steps including, determining the number of required survey participants, selecting survey participants, determining where and how you will administer the surveys, administering the surveys, and having the data evaluated by a testing professional from either within your department or an outside consultant.

DETERMINING THE NUMBER OF SURVEY PARTICIPANTS
Surveying an adequate number of fire fighters in your department is critical to the validity of the results. Similarly, adequately representing the diversity of your department is essential for acquiring a representative sample. The following procedure must be followed to assure a diverse group of individuals have completed the survey:

The number of personnel required to complete the survey is dependent on your department's size. The results are strengthened if more personnel complete the survey. Larger fire departments will be able to survey a percentage of their personnel while smaller fire departments may be required to survey all their personnel. The quantity of surveys completed ensures the results adequately represent the opinions of fire department personnel regarding the criticality and physicality of the survey's 31 fire fighting tasks.
SELECTION OF SURVEY PARTICIPANTS

Members of your department who complete the criticality and physicality ratings of the 31 fire fighting tasks should be selected using a stratified sampling. The selection of these survey participants must follow these steps:

- Individuals selected to complete the survey must represent personnel from all areas within your department's operational rank structure. Probationary fire fighters and fire fighters serving in administrative positions should not complete the survey due to their lack of experience or current exposure to fire fighting tasks.

- Personnel randomly selected to complete the survey must represent a diverse group of department members. Survey participants must include personnel from different ranks, ages, gender, and ethnic/minority groups. The survey participants ultimately selected must include a representative sampling from each of these groups although it is acceptable to have more participants from the lower ranks. Failure to include a diverse department sample may jeopardize the validity of the survey results. A testing professional should be contacted if you experience difficulty regarding your ability to achieve the diversified sample.

ADMINISTRATION OF SURVEYS

Once a group of survey participants have been assembled, the transportability study leader must distribute the job task surveys and #2 pencils with instructions to all participants not to proceed until all instructions have been read and understood. The transportability study leader reads the following instructions after all survey participants have received a job task survey and a #2 pencil:

Please open your booklets to page one and follow along as I read the instructions. The instructions must be followed exactly. Please do not proceed to the survey until I have read the instructions.

The CPAT is a comprehensive evaluation system that evaluates whether fire fighter candidates possess the minimal physical ability to commence training as an entry-level fire fighter.

Your fire department, as the employer, has elected to validate the test for use by your department. The validation effort will require you to participate in a survey regarding fire fighter job requirements. We need you to identify, based on your experience, the critical and physical tasks that all fire fighters must perform.

Your responses to the questionnaire and participation will be completely confidential. You are not required to state your name or provide any identifiers. You have been randomly selected and will remain anonymous. Your completed questionnaire will be collected and analyzed to determine if the CPAT is suitable for use by your department.

Initially, the technical committee, made up of members from the original ten participating departments, reviewed job descriptions and job analyses from each of the ten fire departments. From these job descriptions the committee derived a list of 31 physical tasks are critical to the job of fire fighting.

Please rate each task on two scales based on your experience as a fire fighter. First assess the critical nature of the task during a fire emergency. Second, assess the physical effort required to successfully perform each task. Use the following scale:

Criticality
1 = Not Performed
2 = Least Critical (failure to perform results in no negative consequences.)
3 = Important (beneficial for the successful performance of the job.)
4 = Critical (essential for the successful performance of the job.)
5 = Extremely Critical (failure to perform results in extreme negative consequences.)
Physicality
1 = No physical effort required
2 = Minimal physical effort required
3 = Moderate physical effort required
4 = Excessive physical effort required
5 = Maximal physical effort required

As you rate each task for criticality and physicality be sure not to include the rating variable of frequency. Evaluating the frequency of these job functions, or how often these tasks are performed, was determined by the technical committee to be unnecessary. Due to the emergency nature of a fire fighter's job, a critical task is essential regardless of how frequently it may be performed. For example: Very few fighter pilots ever have the experience of ejecting from the seat of a fighter jet. However this is commonly rated as a critical task for a fighter pilot regardless of how frequent the task is performed.

Are there any questions?

Be sure all incorrect responses are erased and all selections are clearly marked.

After you have completed the survey please close the booklet and hand in your survey. Thank you for taking the time to participate in the CPAT implementation effort. Please begin the survey.

EQUIPMENT SURVEY INSTRUCTIONS

OVERVIEW

During the CPAT development process the technical committee developed an equipment survey to identify the type, size and weight of tools, equipment, and personal protective clothing used by each fire department. Additionally, local demographic information was requested on building construction and codes as well as the average weights of fire fighters and patients admitted to local hospitals and emergency departments.

From the Equipment Survey data, the technical committee developed the standard weights and types of tools and equipment, established the distances used in the course layout, and determined the lengths used in prop and test equipment design.

PERFORMING THE EQUIPMENT SURVEY

The accuracy of your responses to the survey is critical. Inaccurate information can jeopardize your department's ability to utilize the CPAT program. Please follow these steps to insure accurate information:

- Locate the equipment listed on the survey.
- Measure and weigh each piece of equipment using accurate scales (lbs.) and measurement instruments (feet/inches) as identified in the survey. Weights and lengths of equipment taken from specification sheets and or catalogs are also acceptable.
- Insert weights and measures in the appropriate blanks on the survey.
- Fill in the required information on the person who compiled the measurements.
- Compare your survey results with the results of from the 10 task force departments.

EVALUATION OF JOB ANALYSIS AND EQUIPMENT SURVEY

The Job analysis survey data must be analyzed to determine if your fire department is similar to the original 10 fire departments. Comparisons should be made using the original 10 fire department's job analysis found within Appendix E. Furthermore, you must be able to demonstrate that your department personnel rate each of the eight CPAT-related tasks similarly as the original 10 fire departments.

The equipment survey data for your fire department must also be compared to the original 10 fire departments. This data must demonstrate that your fire department uses similar equipment as did the original 10 fire departments, and more importantly what each of the eight CPAT events requires.

It is important the data is properly analyzed. A testing expert should perform the final data analysis and report to ensure the data comparisons are within the limits to allow your fire department to use the CPAT.

LICENSURE

To ensure that the CPAT is being used properly and used only as intended employers responsible for hiring fire fighter candidates must apply for CPAT licensure. This procedure was instituted by the Task Force to protect the integrity of the CPAT Program and the interests of the members of the IAFF and the IAFC by ensuring that the program is implemented properly and as intended.

Under the current policy, authorization to use the CPAT will only be granted to fire departments and other entities
that will be fully administering the CPAT Program. Limiting the granting of licenses to only those entities that actually administer the program have enabled us to better ensure that the CPAT is only being administered in strict compliance with the licensing agreement.

Third party testing organizations (including but not limited to state/provincial fire academies, colleges/universities, or for profit and not for profit testing agencies) that only administer the physical testing portion of the CPAT may apply for a Limited License. Such Limited Licenses allow such third party testing organizations to use the CPAT for purposes of testing the physical capability of fire fighter candidates. However, this license is granted only upon the express conditions that the licensee may only administer the CPAT for a fire department that already possesses a complete and valid license from the IAFF. These Limited License organizations then operate under the license of the jurisdiction that is responsible for administering the overall CPAT Program.

In addition, a fire department that uses another fire department’s resources and facilities to test candidates must apply for a license of their own. The licensing policy ensures that the CPAT Program used by the licensee fully covers every aspect of the CPAT, including recruiting and mentoring programs, orientations, and pre-test, so as to provide recruits with fitness guidance to help prepare them for the CPAT and setting up and administering the test.

If you are contemplating use of the CPAT, you need to complete and forward an application found at www.iaff.org/safe/cpattlicences. As soon as an acceptable application for a CPAT license is completed and received by the IAFF, setting forth the terms and conditions that you will be required to follow in your utilization of the CPAT, a license will be forwarded to you. Any use of the CPAT without a license or any misuse of the CPAT program is a violation of the IAFF copyright on this program.
CHAPTER 4
PREPARATION, ORIENTATION & PRACTICE SESSIONS

The CPAT is a widely used, comprehensive physical ability test designed specifically for the fire service. Use of the CPAT now requires specific requirements for candidate preparation, orientation and practice sessions. Pursuant to the conciliation agreement with the EEOC, the CPAT program must provide all candidates an opportunity to attend at least two CPAT orientations. Additionally, all candidates must receive "hands-on" familiarity with the test apparatus and receive guidance on specific conditioning regimens and techniques to help them prepare for the test. Each candidate shall also be provided an opportunity to perform practice runs of the CPAT.

PREPARATION

The employer must provide all candidates with pretest materials to ensure that all candidates have an equal opportunity to compete for the job of fire fighter. Such a preparation guide provides all candidates, regardless of their background or experience in exercise principals and techniques, the same opportunity to succeed. Similarly, this helps the department avoid failing candidates who are physically capable but unprepared for testing.

The preparation guide must include information on:

- The physical demands of the Candidate Physical Ability Test (CPAT)
- The necessity of proper hydration
- Basic training principles
- Warm up techniques
- Flexibility techniques
- Muscular strength/endurance techniques
- Cardiovascular endurance techniques
- Training techniques for those without a gym or specialized equipment

A sample CPAT Preparation Guide is included in Appendix B.

It is mandatory that all candidates receive a preparation guide at least eight weeks prior to their CPAT date. The guide can be distributed at the time of application or at the orientation prior to the CPAT. In addition, departments may distribute the preparation guide during recruitment activities and such materials should be a part of all mentoring activities.

ORIENTATION

As initially designed and developed, the CPAT provided for voluntary orientation sessions intended to familiarize candidates with the test apparatus and requirements. However, increased orientation and practice opportunities significantly improve the ability of all candidates to complete the CPAT within the "cut off" time of 10 minutes and 20 seconds. Therefore, it is now mandatory that all candidates be given the opportunity to attend at least two (2) orientation sessions, with the first session taking place at least eight (8) weeks prior to the actual test date.

During the sessions, candidates will receive "hands on" familiarity with the actual CPAT apparatus. Also during the orientation sessions, Certified Peer Fitness Trainers, fitness professionals, and/or CPAT-trained fire fighters (proctors) shall familiarize all candidates with each task and apparatus, and shall advise all candidates concerning specific conditioning regimens and techniques to help them prepare for the CPAT. The comprehensive procedures for conducting CPAT orientation sessions are found in Appendix B.

PRACTICE SESSIONS

Fire departments utilizing the CPAT shall also ensure that all candidates have full and equal opportunity to perform at least two (2) timed practice runs, using actual CPAT apparatus and completing the entire course. These mandatory practice sessions shall occur within thirty (30) days of the official test date. Again, Certified Peer Fitness Trainers, fitness professionals and/or CPAT-trained fire fighters (proctors) shall help the candidates understand the test elements and how they can improve their performance and conditioning.

In order to reduce the burden on a department's resources, it is permissible for a candidate to pass the CPAT during either of the practice sessions, provided that the department has fully staffed and administered the test as they would on the official test day. However, a candidate who passes the CPAT during a practice session shall not be rank ordered ahead of any candidate who requires both practice sessions and the official test to pass the CPAT.
WAIVER

Although the two-phased orientation and practice program set forth above must be treated by the fire department as a mandatory condition for candidates taking the CPAT test, it is recognized that fire departments are likely to have candidates in their candidate pool who believe that they are capable of passing the CPAT without attending the orientation and practice program. It is also recognized that resources devoted to the orientation and practice program are best spent on those candidates who will truly benefit from this assistance. It is therefore permissible for fire departments to excuse candidates from this requirement upon receipt of a written and signed waiver from the candidate acknowledging that this orientation and practice program was made available to all candidates on an equal basis and that the candidate voluntarily and knowingly waives the opportunity to participate in the orientation and practice program.

It is required that all those that are licensed to use the CPAT must fully implement these orientation and pre-test procedures. The US Equal Employment Opportunity Commission (EEOC) has also agreed to not bring a lawsuit through April 2011, based upon any claim that the CPAT has an adverse impact for female candidates, against any fire department that utilizes CPAT in conformity with those conditions in their pre-test programs. For those fire departments that are utilizing another Licensee to conduct their CPAT, such fire department, as the employer, must ensure that these changes are incorporated. The EEOC Conciliation Agreement setting forth the foregoing is found in Appendix F.
CHAPTER 5
CPAT EVENTS

PRE-TEST PROCEDURES

The CPAT consists of eight separate events. This test is a sequence of events that requires the candidate to progress along a predetermined path from event to event in a continuous manner. This is a pass/fail test based on a maximum total time of 10 minutes and 20 seconds.

In these events, the candidate wears a 50-pound (22.68-kg) vest to simulate the weight of self-contained breathing apparatus (SCBA) and fire fighter protective clothing. An additional 25 pounds (11.34 kg), using two 12.5-pound (5.67-kg) weights that simulate a high-rise pack (hose bundle), is added for the stair climb event.

Throughout all events, the candidate must wear long pants, a hard hat with chin strap, work gloves and footwear with no open heel or toe. Watches and loose or restrictive jewelry are not permitted.

All props were designed to obtain the necessary information regarding the candidate’s physical ability. The tools and equipment were chosen to provide the highest level of consistency, safety and validity in measuring the candidate’s physical abilities. Schematic drawings and specifications for each prop and specific product information and product numbers are provided in Appendix C. Modification of props or substitution of tools/equipment may alter the content of the test and therefore are not permitted. The entire test is designed to be portable and allow for either indoor or outdoor setup. The floor of the venue must be consistent for all events and for all candidates.

The events are placed in a sequence that best simulates their use in a fire scene while allowing an 85-foot (25.91-m) walk between events. To ensure the highest level of safety and to prevent candidate from exhaustion, no running is allowed between events. This walk allows the candidate approximately 20 seconds to recover and regroup before each event. If the candidate runs between events they receive one warning. A second infraction constitutes a failure, the test time is concluded and the candidate fails the test.

To ensure scoring accuracy by eliminating timer failure, two stopwatches are used to time the CPAT. One stopwatch is designated as the official test time stopwatch, the second is the backup stopwatch. If mechanical failure occurs on the official stopwatch, the time on the backup stopwatch is used. The stopwatches are set to the pass/fail time and count down from 10 minutes and 20 seconds. If time elapses prior to the completion of the test, the test is concluded and the candidate fails the test.

TEST PROCEDURES

The CPAT includes eight sequential events as follows:

- Stair Climb
- Hose Drag
- Equipment Carry
- Ladder Raise and Extension
- Forcible Entry
- Search
- Rescue
- Ceiling Breach and Pull

EVENT 1 STAIR CLIMB

EQUIPMENT

StairMaster StepMill — NOTE: Position the unit on one side up against a wall and the specified elevated platform on the side opposite the wall. The handrail on the side opposite the wall is to be removed. The handrail on the wall side is left in place for the candidate to grasp while mounting and dismounting the StepMill. Additional steps are to be placed at the base of the StepMill to reduce the height needed to mount the StepMill.

PURPOSE OF EVALUATION

This event is designed to simulate the critical tasks of climbing stairs in full protective clothing while carrying a high-rise pack (hose bundle) and climbing stairs in full protective clothing carrying fire fighter equipment. This event challenges the candidate’s aerobic capacity, lower body muscular endurance and ability to balance. This event affects the aerobic energy system as well as the following muscle groups: quadriceps, hamstrings, glutes, calves, and lower back stabilizers.

EVENT

During this event, the candidate is required to wear two 12.5-pound (5.67-kg) weights on the shoulders to simulate the weight of a high-rise pack (hose bundle). Prior to the initiation of the timed CPAT, the candidate has a 20-second warm-up on the StepMill at a set stepping rate of 50 steps per minute (Level 3). During this warm-up period, the candidate is permitted to dismount, grasp the rail or hold the wall to establish balance and cadence. If the candidate falls or steps off the StepMill during the 20-second warm-up period, the candidate is required to remount the StepMill and restart the entire 20-second warm-up period. The candidate is allowed to restart the warm-up period twice. There is no break in time between the warm-up period and the actual timing of the test. The timing of the test begins at the end of this warm-up period when the proctor calls out "START." For the test, the candidate is re-
required to walk on the StepMill at a set stepping rate of 60 steps per minute [Level 4] for 3 minutes. This concludes the event. The two 12.5-pound (5.67-kg) weights are removed from the candidate’s shoulders. The candidate walks 85 feet (25.91 m) within the established walkway to the next event.

The following practices are allowed:
- The candidate is allowed to briefly touch the handrails or wall for balance.
- The candidate is given up to two warnings for grabbing the handrails or bearing their body weight on the handrails/wall.
- The candidate is allowed to restart the warm-up period twice.

The following practices constitute a failure:
- The candidate falls or voluntarily dismounts the Step Mill three times during the warm up.
- The candidate falls or voluntarily dismounts the Step Mill after the start of the test.
- The candidate commits a third infraction for grasping the handrails or bearing weight on the handrails/wall after the start of the test.

Reasons for failure:
- Falling demonstrates poor balance or muscular endurance and could cause injury to the candidate.
- Using the handrails or wall for weight bearing gives the candidate a mechanical advantage that may not be available to them on the fire ground or demonstrates poor balance, conditioning or muscular endurance.

EVENT 2 HOSE DRAG

EQUIPMENT:
- 200 feet (60 m) of double jacketed 1 3/4-inch (44-mm) hose - hose is marked at 8 feet (2.44 m) past the coupling at the nozzle and at 50 feet (15.24 m) past the coupling at the nozzle.
- Automatic Nozzle - 6 lbs (± 1lb), 3 kg (± 0.5 kg)
- Two 55-gallon (US) (208.2-liter) Drums secured together - bottom drum is filled with water or other ballast for weight

PURPOSE OF EVALUATION:
This event is designed to simulate the critical tasks of dragging an uncharged hose line from the fire apparatus to the fire occupancy and pulling an uncharged hose line around obstacles while remaining stationary. This event challenges the candidate’s aerobic capacity, lower body muscular strength and endurance, upper body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, calves, lower back stabilizers, biceps, deltoids, upper back, and muscles of the forearm and hand (grip).

EVENT:
During this event, the candidate grabs an automatic nozzle attached to 200 feet (60 m) of 1 3/4-inch (44-mm) hose. The candidate places the hose line over the shoulder or across the chest, not exceeding the 8-foot (2.44-m) mark. The candidate is permitted to run during the hose drag. The candidate drags the hose 75 feet (22.86 m) to a prepositioned drum, makes a 90° turn around the drum and continues an additional 25 feet (7.62 m). The candidate then stops within the marked 5 foot x 7 foot (1.52 m x 2.13 m) box, drops to at least one knee and pulls the hose line until the hose line’s 50-foot (15.24-m) mark is across the finish line. During the hose pull, the candidate must keep at least one knee in contact with the ground and knee(s) must remain within the marked boundary lines. This concludes the event. The candidate walks 85 feet (25.91 m) within the established walkway to the next event.

The following practices are allowed:
- The candidate is given one warning to keep one knee down.
- The candidate is given one warning to keep the knees in bounds.
- The candidate is given one warning for taking one step out of the box.
- The candidate is permitted to run during the hose drag.

The following practices constitute a failure:
- The candidate falls to go around the drum.
- The candidate travels outside of the marked path.
- The candidate takes two steps out of the back of the box.
- The candidate commits a second infraction for not keeping one knee in contact with the ground.
- The candidate commits a second infraction for the knees being outside of the marked boundary.

Reasons for failure:
- Running beyond the marked path gives the candidate a mechanical advantage by decreasing the distance required to pull the hose by hand. This advantage may not be available on the fire ground. This demonstrates a lack of upper body strength by using lower body strength to compensate.
- By not keeping their knee on the floor a candidate could compensate for a deficiency in grip and upper body strength by standing up.
**EVENT 3 EQUIPMENT CARRY**

**EQUIPMENT**
- Rescue Circular Saw 32 ± 3 lbs (14.5 ± 1.3 kg); Chain Saw 28 ± 3 lbs (12.7 ± 1.3 kg) (blades guarded, fluids drained, spark plugs removed)
- Tool Cabinet
- 55-gallon [US] (208.2-liter) weighted drum

**Purpose of Evaluation**
This event is designed to simulate the critical tasks of removing power tools from a fire apparatus, carrying them to the emergency scene and returning the equipment to the fire apparatus. This event challenges the candidate's aerobic capacity, upper body muscular strength and endurance, lower body muscular endurance, grip endurance, and balance. This event affects the aerobic energy system as well as the following muscle groups: biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quadriceps, and hamstrings.

**EVENT**
During this event, the candidate removes the two saws from the tool cabinet, one at a time, and places them on the ground. The candidate then picks up both saws, one in each hand, and carries them while walking 75 feet (22.86 m) around the drum, then back to the starting point. The candidate is permitted to place the saw(s) on the ground and adjust the grip. Upon return to the tool cabinet, the candidate places both saws on the ground, then picks up each saw one at a time, and replaces the saw in the designated space in the cabinet. This concludes the event. The candidate walks 85 feet (25.91 m) within the established walkway to the next event.

The following practice is allowed:
- The candidate is given one warning for running.
- The candidate is allowed to adjust and re-establish the grip.

The following practices constitute a failure:
- The candidate drops either saw during the carry.
- The candidate commits a second infraction for running with the saws.

**Reasons for failure**
- Dropping the saws could injure the candidate and demonstrates poor grip strength or muscular endurance.
- Running with saws could cause injury if the candidate trips.

**EVENT 4 LADDER RAISE AND EXTENSION**

**EQUIPMENT**
- Two 24-foot (7.32-m) aluminum ground ladders
- Pivoting bracket for ladder raise
- Retractable Safety Lanyard for ladder raise
- Attaching brackets for ladder extension

**PURPOSE OF EVALUATION**
This event is designed to simulate the critical tasks of placing a ground ladder at a fire structure and extending the ladder to the roof or window. This event challenges candidate's aerobic capacity, upper body muscular strength, lower body muscular strength, balance, grip strength, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: biceps, deltoids, upper back, trapezius, muscles of the forearm and hand (grip), glutes, quadriceps, and hamstrings.

**EVENT**
During this event, the candidate walks to the top rung of the 24-foot (7.32-m) aluminum extension ladder, lifts the first rung at the unhinged end from the ground, and walks it up until it is stationary against the wall. This must be done in a hand over hand fashion, using each rung until the ladder is stationary against the wall. The candidate must not use the ladder rails to raise the ladder. The candidate immediately proceeds to the pre-positioned and secured 24-foot (7.32-m) aluminum extension ladder, stands with both feet within the marked box of 36 inches x 36 inches (91.44 cm x 91.44 cm) and extends the fly section hand over hand until it hits the stop. The candidate then lowers the fly section hand over hand in a controlled fashion to the starting position. This concludes the event. The candidate walks 85 feet (25.91 m) within the established walkway to the next event.

The following practices are allowed:
- The candidate is given one warning for missing any rung during the raise.
- The candidate is given one warning for a boundary violation during the ladder extension.

The following practices constitute a failure:
- The candidate commits a second infraction for missing any rung during the raise.
- The candidate allows the ladder to fall to the ground during the raise.
- The candidate releases their grip on the ladder and the safety lanyard activates.
- The candidate commits a second infraction for not remaining within the marked boundary during the ladder extension.
- The candidate does not control the halyard in a hand over hand manner.
- The candidate allows the halyard to slip in an uncontrolled manner.
Reasons for failure

- Skipping rungs would give a taller candidate an advantage over a shorter candidate and is therefore not permitted. It would also allow the candidate to throw the ladder up in the air which is both unsafe and unavailable to the candidate at a fire scene when the base of the ladder is not hinged to the ground.
- Failure to completely raise the ladder demonstrates poor grip and muscular strength.
- A candidate could gain an advantage by walking the hallway backward to compensate for poor upper body strength. This compensation is not available on the fire ground where the ladder is not bolted to the fire structure.
- Failure to control the ladder indicates poor grip strength as well as muscular strength and endurance.

EVENT 5 FORCIBLE ENTRY

EQUIPMENT

- Forced Entry Machine
- 10-pound (4.54-kg) Sledgehammer
- Toe-Box

PURPOSE OF EVALUATION

This event is designed to simulate the critical tasks of using force to open a locked door or to breach a wall. This event challenges the candidate's aerobic capacity, upper body muscular strength and endurance, lower body muscular strength and endurance, balance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, glutes, triceps, upper back, trapezius, and muscles of the forearm and hand (grip).

EVENT

During this event, the candidate uses a 10-pound (4.54-kg) sledgehammer and strikes the measuring device in the target area until the buzzer signal is activated. The candidate's feet must remain outside the toe-box. After the buzzer is activated, the candidate places the sledgehammer on the ground. This concludes the event. The candidate walks 85 feet (25.91 m) within the established walkway to the next event.

The following practice is allowed:

- The candidate is given one warning for stepping inside the toe-box.

The following practices constitute a failure:

- The candidate fails to maintain control of the hammer while swinging.
- The candidate commits a second infraction for stepping inside the toe-box.
EVENT 7 RESCUE

EQUIPMENT

- 165-pound (74.84-kg) Mannequin (unclothed)
- Mannequin harness
- 35-gallon [US] (208.2-liter) weighted drum

PURPOSE OF EVALUATION

This event is designed to simulate the critical task of removing a victim or injured partner from a fire scene. This event challenges the candidate’s aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, trapezius, deltoids, latissimus dorsi, biceps, and muscles of the forearm and hand (grip).

EVENT

During this event, the candidate grasps a 165-pound (74.84-kg) mannequin by the handle(s) on the shoulder(s) of the harness (either one or both handles are permitted), drags it 35 feet (10.67 m) to a pre-positioned drum, makes a 180° turn around the drum, and continues an additional 35 feet (10.67 m) to the finish line. The candidate is not permitted to grasp or rest on the drum. It is permissible for the mannequin to touch the drum. The candidate is permitted to lower the mannequin to the ground to adjust their grip. The entire mannequin must be dragged past the marked finish line. This concludes the event. The candidate walks 85 feet (25.91 m) within the established walkway to the next event.

The following practices are allowed:

- The candidate receives one warning for grabbing or resting on the drum.
- The candidate is permitted to grab either one or both handles when dragging the mannequin
- The candidate is permitted to lower the mannequin to the ground to adjust their grip

The following practices constitute a failure:

- The candidate commits a second infraction for grabbing or resting on the drum.

Reasons for failure

- Use of the drum by either grasping or resting on it indicates a lack of muscular strength and endurance.

EVENT 8 CEILING BREECH AND PULL

EQUIPMENT

- Ceiling Breach and Pull Device
- 6-foot (1.83-m) Pike Pole

PURPOSE OF EVALUATION

This event is designed to simulate the critical task of breaching and pulling down a ceiling to check for fire extension. This event challenges the candidate's aerobic capacity, upper and lower body muscular strength and endurance, grip strength and endurance, and anaerobic endurance. This event affects the aerobic and anaerobic energy systems as well as the following muscle groups: quadriceps, hamstrings, glutes, abdominals, torso rotators, lower back stabilizers, deltoids, trapezius, triceps, biceps, and muscles of the forearm and hand (grip).

EVENT

During this event, the candidate removes the pike pole from the bracket, stands within the boundary established by the equipment frame, and places the tip of the pole on the painted area of the hinged door in the ceiling. The candidate fully pushes up the 60-lb hinged door in the ceiling with the pike pole three times. The candidate then hooks the pike pole to the 80-lb ceiling device and pulls the pole down five times. Each set consists of three pushes and five pulls. The candidate repeats the set four times. The candidate is permitted to stop and, if needed, adjust the grip. Releasing the grip or slipping from pike pole handle, without the pike pole falling to ground, does not result in a warning or constitute a failure. The candidate may re-establish the grip and resume the event. If the candidate does not successfully complete a repetition (i.e., complete the up and down motion), the proctor calls out "MISS" and the candidate must push or pull the apparatus again to complete the repetition. The event and the total test time ends when the applicant completes the final pull stroke repetition as indicated by the proctor who calls out "TIME".

The following practices are allowed:

- The candidate receives one warning for dropping the pike pole on the ground.
- The candidate receives one warning for stepping out of bounds.
- The candidate is permitted to stop and to re-establish grip

The following practices constitute a failure:

- The candidate commits a second infraction for stepping outside of the boundary marked by the testing apparatus.
- The candidate commits a second infraction for dropping the pike pole.

Reasons for failure

- Stepping out of bounds allows the candidate to use body weight to compensate for poor upper body strength, an advantage by that may not be an option on the fire ground.
- Failure to maintain control of the pike pole indicates poor grip strength and muscular endurance.
CHAPTER 6
CPAT ADMINISTRATION

CPAT ADMINISTRATION

Consistent CPAT administration is essential to the continued success of the CPAT program throughout North America. Adhering strictly to the policies and procedures in this manual ensure that test administration is consistent from one candidate to another and avoids any biases. This chapter must be followed to ensure CPAT administrators are able to:

- Administer all aspects of the CPAT program.
- Choose a proper CPAT venue.
- Decide whether or not to administer the CPAT based on environmental conditions.
- Register candidates for the CPAT.
- Administer the CPAT using the proper forms.
- Schedule candidates for the CPAT.
- Orient candidates on official test day.
- Stage waiting candidates on official test day.
- Assign support personnel to assist with the CPAT (i.e. Rehab, equipment maintenance, dress out, check-in, filling, etc.).
- Assign roles and responsibilities to lead and event processors.
- Describe the legal necessity for following the CPAT requirements to the letter.
- Describe the requirements and purpose of the CPAT candidate orientation and practice sessions.

VENUE SELECTION

The venue selected to conduct the test is critical. The site must have a floor surface that will not give any candidate an unfair advantage or disadvantage and should be similar to that used during test validation. Therefore, the test must be conducted on a surface with friction values similar to that of an unpaved concrete floor.

The venue should have an area large enough to accommodate check-in/staging, test and rehabilitation areas. The check-in/staging area is dedicated to receiving candidates as they report for their CPAT. If possible, the check-in/staging area should be isolated from the actual CPAT site so arriving candidates are not distracted by the candidates actually performing the test. The test area must also be large enough so structures, walls or obstacles do not restrict a candidate's ability to perform the events.

A rehabilitation area must be provided to allow candidates recovery time before leaving the test site. In rehabilitation, processors provide candidates with a shaded area where they can re-hydrate and have their vital signs monitored if medically indicated.

USING AN INDOOR SITE

Administering the CPAT indoors insures that environmental conditions are controlled no matter what time of year the test is offered. There are several physical requirements an indoor CPAT facility should have. Indoor CPAT facilities will vary depending on department budget, frequency of use, and available buildings. Listed are two extreme (large and small) examples of indoor CPAT facilities that are currently in use.

Large fairground exhibit hall or aircraft hangar
- 20,000 to 25,000 square feet of open space with a ceiling height of 24 feet (ladder modification will allow ceiling height of 18 ft.)
- 2,000 square feet of open space for workout area
- 2,000 square feet of air-conditioned, well lit, classroom space
- 500 square feet of air-conditioned office space
- 1,000 square feet of storage space

Small warehouse
- 5,000 plus square feet of open space with ceiling height of 24 feet (ladder modification will allow ceiling height of 18 ft.)
- 100—200 square foot workout area
- 100—200 square foot classroom area
- 200—300 square feet of air-conditioned office space
- Ability to store extra props and tools within warehouse area. May be a space designated within the CPAT area but in a location where candidates are not permitted.

The area designated for the CPAT should have an air cooling and heating system (HVAC), adequate lighting and electrical capabilities to energize props. Air conditioning is preferred but due to the expense, evaporative cooling would be sufficient. In order to insure the highest level of safety, the area must be well lit. In addition, the area will require a 110/120-volt electrical outlet every 50 feet on each side to accommodate CPAT prop placement. Finally, the building must have restroom facilities for both females and males.

LOGISTICAL AND ENVIRONMENTAL FACTORS

Environmental factors can have a significant effect on a candidate's test performance. The test should be conducted in environmental conditions that optimize the candidate's safety and provide for consistency among candidates. The test must not be conducted in excessively hot, cold or wet conditions. Candidates must not be tested in an environment where the temperature is below 45° F (7°C), the
Apparent Heat Index (temperature and humidity) is greater than 95°F (35°C), sustained wind is greater than 20 mph (32 kph), or there is a measurable amount of rain (light drizzle only if working surfaces are safe to walk on and props, tools and test equipment can be kept dry).

TEST PROPS

Test props must be in the highest serviceable condition when positioned for the orientation, practice sessions and actual test. Each prop must be properly calibrated and affixed using the highest grade of attachment anchors. It is imperative that props be located in an area with sufficient space for candidates to maneuver their bodies and manipulate the prop. If possible, backup props should be held in reserve in the event that frontline equipment is damaged. Lines indicating the course direction also must be clearly marked. Candidates who experience a malfunctioning test prop must be allowed to re-test regardless of the time remaining and/or the event where the candidate experienced the malfunction.

COURSE LAYOUT

The CPAT can be constructed indoors, outdoors, within small confined areas or large open spaces. Whatever area is selected, it is important to follow all prop and course specifications as written in this manual. Failure to follow these specifications can jeopardize the validity of the test.

DESIGNING THE COURSE

The first step in designing the course and building the props is making sure you have all the right equipment. A complete prop list can be found in Appendix D including the necessary quantities and where to purchase the equipment. The list includes props that must be purchased through the IAFF-approved vendors as well as props that may be fabricated by fire department personnel.

Designing the course is easiest when ample space is available. The smaller the area the more difficult to design and build the course due to the number of turns that have to be included within the design. Following these steps when designing a course can save considerable effort:

Note: When laying out a course, all events must be positioned 85 feet apart. This means the base of the StepMill should be 85 feet away from the tip of the nozzle at event 2. If you cannot make a straight line from one event to the other, insert turns to create more distance. To measure the 85 feet is to use a 100-foot tape measure or a string that is 85 feet long (do not stretch) and have people to assist with creating turns in the middle as people hold each end at the respective props.

Step 1

Identify the area where the stationary items such as the search maze, forcible entry machine, and ladders will be located. Of the three, the most important location is the search maze. It should be positioned in a flat area where the space behind it is virtually unusable. The area where the search maze is located is critical because it is the most difficult of all the props to move. Before committing to the location where you think it should go, be sure to measure out all prop locations to be certain the entire course will fit in the space provided.

Step 2

Once the search maze is positioned, move away from the entrance and the exit to mark the positions of the forcible entry machine and dummy drag respectively. Continue to move away from these props and mark the next events in line. Be careful not to cross lines when possible. Crossing lines may cause the candidates to interfere with one another if more than one candidate is on the course. Other things to consider when positioning props:

- The StepMill in event one must be placed so one side is against a wall and a 120V power outlet is available within extension cord distance.
- Event 1 should be located near the area where the candidates will be dressing out and warming up.
- The Hose Drag needs at least 75’ straight distance.
- The Equipment Carry needs at least 75’ straight distance.
- If using a portable trailer, the ladders and forcible entry machine are mounted on the trailer so the 85’ distance between these events is made using turns.
- The rehabilitation area should be located near event 8 so that the candidates will not have to travel far after completing the test.

Step 3

Once the general positions of the props have been identified, the next step is to assemble the props. Begin by setting up the Search Maze first. Re-check distance between events and mark final walking paths. Assemble all props to the specifications listed in Appendix D. The following is additional information that may assist when building the props.

EVENT 1 - STAIR CLIMB

One side of the StepMill should be positioned against a wall that extends just higher than a candidate’s head when he/she is standing on the top step of the StepMill. With the one side of the StepMill placed against the wall, the opposite handrail should be removed and the control console removed. The control console should be positioned on the proctor’s stand that is located on the right side of
the StepMill. The proctor stand should be built in accordance with the specifications found in Appendix D. With the console in this position, the event proctor can better monitor the time while also having immediate access to the stop button. A candidate step must also be constructed. The step should be positioned at the base of the StepMill where the candidate mounts and dismounts the machine. The step should also meet the specifications found in Appendix D.

The 85' walk starts where the candidate steps off the StepMill on the ground and ends at the tip of the nozzle where the candidate picks up the hose to begin event two.

EVENT 2 - HOSE DRAG
The hose must be marked at 2 different locations. The first mark should be placed 8 feet from the coupling at the tip. This mark indicates where the candidate is allowed to pick up the hose to begin extending around the drum. The second mark is placed at the first coupling beyond the tip and is to indicate the section of the hose the candidate must pull into the 5' x 7' box.

The 75' from the nozzle to the drum and the 25' from the drum to the 5' x 7' box must be positioned in accordance with Appendix D.

The 85' walk starts where the candidate exits the 5' x 7' box to begin walking to the next event. The measurement starts at the point where the walk line meets the 5' x 7' box and ends at the base of the cabinet where the candidate removes the saws in event three.

EVENT 3 - EQUIPMENT CARRY
The equipment carry cabinet must be constructed in accordance with the specifications found in Appendix D.

The 85' walk starts at the center of the cabinet where the candidate places the saws and ends at the tip of the 24' extension ladder lying flat on the ground in event four.

EVENT 4 - LADDER RAISE AND EXTENSION
The halyard on the ladder used for flat raise should be removed. This halyard may be used as a back up for the upright extension ladder. With the halyard removed, the rungs should be taped to prevent the ladder from slipping while it is raised and lowered.

Remove dog/locks on the upright extension ladder. This prevents “hang-ups” of ladder on rungs as it is being extended and lowered by the candidate. The manufacturer’s halyard is used on the upright extension ladder; however, replacement halyards of the same type can be purchased at any hardware store.

The ladders must be positioned in accordance with the specifications found in Appendix D. NOTE: It makes no difference which ladder is on the left and which one is on the right as long as they are the proper distance apart.

The 85' walk starts where the candidate exits the 3' x 3' box at the base of the upright/extension ladder and ends directly below the face of the hitting pad of the forcible entry device in event five.

EVENT 5 - FORCIBLE ENTRY
The four posts that the forcible entry striking pad slides on must be well maintained and kept free from moisture. The slightest moisture will cause the posts to rust. Moisture will also cause the brake shaft within the unit to rust. Both of these areas of the forcible entry device must be kept clean to ensure proper calibration is maintained. The toe board should be constructed and positioned in accordance with the specifications found in Appendix D.

NOTE: The recommended tension on the forcible entry machine in the original edition of the CPAT guide was based upon the original Beta Tested Forcible Entry Machine. This machine was provided from New York City and was developed several years ago by a waste management engineer. During the CPAT development, the force required to successfully complete this event was compared to the force required to successfully force entry on an actual door. The original Beta version of the Forcible Entry machine had a V-Shaped Wedge that was driven between two brake pads. The tension on these brake pads was provided by 4 adjustable springs. This design was found to be inconsistent since the force to initiate the movement of the striking surface (300lbs) was drastically lower than the force at the end of the exercise (1,300lbs). Furthermore, this design was difficult to calibrate and maintain consistent resistance. To remedy these concerns, our current producer of the forcible entry machine (ALCO) redesigned the wedge and the tensioning device. Currently, the wedge has a minimal V-Shape and the tension is created by 8 airplane grade springs. This design provides a consistent resistance and requires far less calibration during the administration of the test. During the reliability study in Los Angeles County this new design was tested and compared to the Beta version. It was found that the new ALCO machine should be calibrated at 850 lbs. Although, this machine should usually hold its tension for an entire day of testing, the manufacturer recommends recalibrating it after every 15 users.

The 85' walk starts directly below the face of the hitting pad of the forcible entry device and ends at the midpoint of the horizontal face of the entrance to the search maze in event six.
# TCSS LIFE or Physical Education Elective Waiver Request Application

**Student Name:**

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<th>Last</th>
<th>First</th>
<th>Middle</th>
<th>Grade</th>
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**School:**

**Sport and/or Name of Sponsoring Facility/Agency:**

(Please attach a copy of the facility/agency's description of offerings, etc. to the agreement)

**Name of Coach/instructor:**

**Coach's/instructor's Email Address and Phone Number:**

**Coach's/instructor's Certification or Credentials:**

**Student's reason for waiver request:**

- [ ] Additional time for career-related courses
- [ ] Additional time for advanced courses
- [ ] Dual enrollment
- [ ] Scholarship opportunities
- [ ] Early graduation
- [ ] Passion/enjoyment for sport/event
- [ ] Personal interests
- [ ] To gain skills needed for personal achievement
- [ ] Other

## Detailed Schedule

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<thead>
<tr>
<th>Weekday</th>
<th>Beginning Time</th>
<th>Ending Time</th>
<th>Activity</th>
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**Credit Flexibility Request for Pre-Approved Extracurricular Opportunities**

The application and agreement must be attached to the student's spring course registration materials. Final approval will be determined by the Curriculum and Instruction Staff at the Central Office prior to the end of the school year (May). Written notification will be provided to the school, the parents/guardians and the student regarding the decision of the application.
TCSS LIFE or Physical Education Elective Waiver Request
Log for Documenting Clock Hours
(Minimum 75 Hours of Physical Activity)

Student Name:

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<th>Last</th>
<th>First</th>
<th>Middle</th>
<th>Grade</th>
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School:

Sport and/or Name of Sponsoring Facility/Agency:

Name of Coach/Instructor:

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<tr>
<th>Activity</th>
<th>Date</th>
<th>Number of Minutes</th>
<th>Supervised By</th>
<th>Purpose of Session (performance, practice, specific skill, competition, etc.)</th>
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Totals:

Signature of Coach: ___________________________ Date: ________
Signature of Parent/Guardian: ___________________________ Date: ________
Signature of Student: ___________________________ Date: ________

Note: This form is to be completed by the coach/instructor and submitted to the designated physical education teacher at the local school at least one week prior to the end of each nine-week grading period.

Credit Flexibility Request for Pre-Approved Extracurricular Opportunities

The application and agreement must be attached to the student's spring course registration materials. Final approval will be determined by the Curriculum and Instruction Staff at the Central Office prior to the end of the school year (May). Written notification will be provided to the school, the parents/guardians and the student regarding the decision of the application.
# TCSS LIFE or Physical Education Elective Waiver Request

## Performance Evaluation Criteria

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Points Available</th>
<th>Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>Minimum of 75 total hours of physical activity and a weekly log to be turned in each nine-weeks to the designated physical education teacher at the local school</td>
<td>100% Attendance X 5 points = 500 points</td>
<td>To be determined</td>
</tr>
<tr>
<td>Citizenship</td>
<td>Positive attitude, leadership, perseverance, commitment, and self-motivation</td>
<td>100 points</td>
<td>To be determined</td>
</tr>
<tr>
<td>Ability/Performance Task</td>
<td>Ongoing formative checks (growth in skills) and Final evaluation (could be formal performance, competition, or informal assessment)</td>
<td>50% Ongoing formative checks + 50% Final evaluation = 100 points</td>
<td>To be determined</td>
</tr>
<tr>
<td>Alabama Course of Study Standards (<a href="http://www.ALEX.state.al.us">www.ALEX.state.al.us</a>)</td>
<td>Skill development, cognitive development, social development, and physical activity and health (See Alabama Course of Study)</td>
<td>Embedded in prior three categories</td>
<td>NA</td>
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</tbody>
</table>

## Agreement of Understanding

It is my understanding that the above-named student is applying for a LIFE or physical education elective waiver and that the student must participate in a physical education activity, under professional supervision, for a minimum of 75 hours of physical activity (calculated at approximately 25 minutes per day at five days a week at 36 weeks).

If the student is approved for the LIFE or physical education elective waiver, the student must participate in a physical education program meeting the requirements as designated to meet the following: physical activity time requirements, regular attendance as required by sport and/or sponsoring agency/facility, commitment and skill improvement, and performance evaluation criteria (outlined in the application).

As a professional instructor/coach, I agree the standards will be met and that I am responsible for overseeing and completing all necessary documentation and final performance evaluation. I understand that it must be submitted to the designated physical education teacher at the local school at least one week prior to the end of each nine-week grading period.

Signature of Coach: ___________________________ Date: __________

Signature of Parent/Guardian: ___________________________ Date: __________

Signature of Student: ___________________________ Date: __________

Signature of Counselor: ___________________________ Date: __________

Signature of Principal: ___________________________ Date: __________

Date Submitted to the Curriculum and Instruction Staff at the Central Office: ___________________________ Date: __________

Approved: ___________________________ Not Approved: ___________________________

## Credit Flexibility Request for Pre-Approved Extracurricular Opportunities

The application and agreement must be attached to the student’s spring course registration materials. Final approval will be determined by the Curriculum and Instruction Staff at the Central Office prior to the end of the school year (May). Written notification will be provided to the school, the parents/guardians and the student regarding the decision of the application.
Date: __________________

Student Name: ________________________________

School: ________________________________

Grade: ________________

Your application for the LIFE or physical education waiver has been received, reviewed and approved. Based on the program requirements for __________________________, participation will exceed the minimum 75-hours of physical activity required for the waiver.

Please remember, final approval for the credit will be determined by the Curriculum and Instruction Staff at the Central Office prior to the end of the school year in May. This decision will be based on the documentation submitted by the designated coach/instructor during each nine-week grading period for the __________________________ academic year.

A Performance Evaluation will be completed at the end of the year in the areas of Attendance, Citizenship, Performance and Task Completion. Please be sure the TCSS LIFE or Physical Education Elective Waiver Request – Log for Documenting Clock Hours is completed by the coach/instructor for your program. The log should be submitted to the designated physical education teacher at your school at least one week prior to the end of each nine-week grading period. A copy is attached for your reference.

Feel free to contact me if you have any additional questions.

Sincerely,

______________, Director of Curriculum and Instruction - ________ Region

Cc: ________________, Principal
    ________________, Counselor

Attachment: TCSS LIFE or Physical Education Elective Waiver Request – Log for Documenting Clock Hours

Credit Flexibility Request for Pre-Approved Extracurricular Opportunities

The application and agreement must be attached to the student’s spring course registration materials. Final approval will be determined by the Curriculum and Instruction Staff at the Central Office prior to the end of the school year (May). Written notification will be provided to the school, the parents/guardians and the student regarding the decision of the application.
TUSCALOOSA COUNTY VIRTUAL LEARNING CENTER

MISSION
The Tuscaloosa County School System will offer a county-wide distance learning program to students in middle and high school who need a non-traditional and/or home-based environment. The goal of the Tuscaloosa County Virtual Learning Center is to ensure students stay in school and graduate on time by providing an alternate avenue to attempt credit improvement (advancing credit, obtaining credit, recovering credit and/or repeating credit). The Tuscaloosa County Virtual Learning Center will incorporate the innovative use of technology, a rigorous curriculum from A+NYWHERE Learning System, and individualized learning plans for each student that accommodate a wide variety of learning styles.

ENROLLMENT
Students that live within the attendance zone boundaries of the Tuscaloosa County School System may apply for enrollment in the Tuscaloosa County Virtual Learning Center. The center will be structured to serve at-risk students who could have dropped out, are credit deficient, have been retained or recommended for retention, have never been proficient in required ALSDE examinations, have attended multiple schools, or are simply interested in enrolling in an online learning environment.

PURPOSE
The purpose of the Tuscaloosa County Virtual Learning Center is multifaceted. We intend to use these services to meet the targeted students through the following components:

- G.R.A.D. Academy
- G.R.A.D. Academy at Project BETHEL (A partnership with Bethel Baptist Church)
- eGRAD – Students will be permitted to take courses through traditional and non-traditional scheduling year round (including summer months).
  - Pathway Academy
  - Credit Improvement Program
    - Credit Acceleration – Advancing Credit
    - Credit Acceleration – Obtaining Credit
    - Credit Recovery
    - Repeating Credit
- Tuscaloosa County School System Home-Based Education

There may be a minimum charge for participating in these programs.

The Tuscaloosa County Virtual Learning Center will provide an individualized learning plans for students enrolled in the center, so that they will gain the skills and knowledge to achieve their goals as individuals and to be graduates prepared for life.

PROGRAM COMPONENTS

G.R.A.D. ACADEMY (GROWTH, RECOVERY, ACHIEVEMENT, DEDICATION)
The Tuscaloosa County School System attempts to provide a positive, rewarding, educational experience for all of our students. Sometimes, however, the general program is simply inappropriate or inadequate. The G.R.A.D. Academy exists to provide an optimal educational environment for students whose unique situation and/or needs are not fully addressed within the constraints of the traditional program.

G.R.A.D. ENROLLMENT CRITERIA

- Referral from Tuscaloosa County School System Hearing Officer
- 2 or more classes failed
- 10 or more absences
- 3 or more office referrals
- Other factors (individual basis)
TUSCALOOSA COUNTY VIRTUAL LEARNING CENTER

LENGTH OF STAY
Students will be given a minimum of 30 days assigned to the G.R.A.D. Academy. The duration of stay in the program is dependent on student progress. Depending on attendance, behavior, and academic progress, time may be added or taken away.

SUBJECT REQUIREMENTS
Students will be able to receive credit for their core classes (math, English, social studies, and science) and selected electives. All classes will be in technology based format, distance learning, correspondence or hard copy.

GRADES
Grades will be sent to the general education teacher to be averaged into classroom grades upon student’s return to general education classes. If applicable, final grades will be submitted to the home school for input into student records. Students must meet Board policy for promotion.

G.R.A.D. PROGRESS REQUIREMENTS
• 70 average in all academic classes
• 75 overall average
• 20 successful days of attendance guideline
• Two or fewer excused absences
• Two tardies or less
• Weekly behavior point average of 80%
• Two or fewer disciplinary occurrences – zero office referral

G.R.A.D. ACADEMY AT PROJECT BETHEL
Administrative options for students who have committed a Class III Major Offense have been suspension (not to exceed 10 days), expulsion, G.R.A.D. Academy and/or legal action. Students expelled from the Tuscaloosa County School System often become a dropout; therefore, an alternate learning environment is necessary to assign students who have committed Class III Major Offenses rather than expelling them from the Tuscaloosa County School System permanently. G.R.A.D. Academy at Project BETHEL provides this type of school setting. Students eligible to attend G.R.A.D. Academy at Project BETHEL will have their expulsions held in abeyance. Students will remain on roll at their respective high schools, but receive their instruction at G.R.A.D. Academy at Project B.E.T.H.E.L. Through the expansion of G.R.A.D. Academy at Project BETHEL, students from the Tuscaloosa County School System shall receive full credit for work done in core academic classes. The Tuscaloosa County School System will provide access to our A+NYWHERE Learning System to our students attending G.R.A.D. Academy at Project BETHEL.

G.R.A.D. Academy at Project BETHEL can also serve at-risk students who have committed repeated Level I and Level II offenses as well. For the majority of students, the goal is to return to the regular public school.

eGRAD
This program will consist of an online/virtual school that uses technology to connect grade K-12 students, parents, and teachers throughout the Tuscaloosa County School System. We will partner with A+NYWHERE Learning System, which offers proprietary curriculum and educational services created for individualized learning for students in kindergarten through 12th grade.

Students will have to bring their own devices to load the software. There will be some minimum specifications (specs) for the device. That said, if a child does not have access to a device, one will be issued (procedures are being developed). It is our intent to begin this program at the high school level and expand slowly to lower levels, contingent upon funding.

Students will be permitted to take courses through traditional and non-traditional scheduling year round (including summer months). The various scheduling options and eligibility are as follows:
• PATHWAYS ACADEMY – The Pathways Academy is an alternative to traditional high school and provides an option for students in need of a flexible schedule. This flexibility will encourage students to stay in school and graduate.
TUSCALOOSA COUNTY VIRTUAL LEARNING CENTER

Eligible students may take first-time courses or recover credit. Students who have dropped out or who are behind at least two or more credits may attend Pathways Academy. Students enrolled in Pathways Academy who meet the graduation requirements will earn an Alabama High School Diploma. Students will remain on roll at their respective high schools, but receive their instruction nontraditionally. Pathways Academy will operate between the hours of 4:00 p.m. and 7:30 p.m., Monday through Thursday.

PATHWAY ACADEMY ENROLLMENT CRITERIA

- Be at least 16 years of age and/or two years behind
- Be working to meet coursework requirements for graduation
- Have completed the application process for the Pathways Academy and
- Participate in an interview with student, parent/guardian and Pathways Academy administrators.

- CREDIT IMPROVEMENT PROGRAM — In addition to the traditional high school program, students enrolled in the Credit Improvement Program may participate in coursework during the school day, in the afternoon, and evening hours in order to accelerate credit, obtain credit, recover credit and repeat credit. Students will remain on roll at their high schools, but receive their instruction nontraditionally. The options provide opportunities to catch-up and/or accelerate to meet academic requirements to graduate. The Credit Improvement Program serves at-risk students who could have dropped out, are credit deficient, have been retained or recommended for retention, have never been proficient in required ALSDE examinations, have attended multiple schools, or are simply interested in enrolling in an online learning environment.

Credit Acceleration – Advancing Credit

This program allows students who already know most of the standards taught in a particular course to prove mastery of course content by successfully completing a pretest and posttest in that subject. Students can attempt credit advancement in math, English, science, social studies and elective classes.

The tests used for credit advancement are either ACCESS pretests/posttests or locally approved computer-based exams. Students interested in attempting credit advancement should contact their high school’s credit advancement coordinator to schedule an appointment to take the pretest credit advancement exam. Students should allow approximately 1.5 hours to take a pretest credit advancement exam. All credit advancement exams will be given on an electronic device at the high school campus and will be proctored by the principal’s designee. There is no fee to participate in credit advancement.

Parent permission is required to participate in credit advancement. The permission form is located on the Tuscaloosa County School System’s website. This form must be signed by the parent or guardian, the student, the high school counselor, and high school principal.

Students attempting credit advancement will take a pretest for the course. If the student earns at least an 80 on the pretest, then he/she will take a comprehensive posttest. If the student makes at least an 80 on the posttest, then he/she will receive credit for the course. If the student earns below an 80 on the pretest, then he/she is not eligible to take the posttest or to receive credit for the course.

Once the student has passed the pretest, he/she will need to schedule an appointment to take the posttest. The student should allow approximately 1.5 hours to take a posttest. The posttest must be taken within one week of the results of the pretest being released to the students. Students are permitted to take the posttest on the same day as the pretest if an appointment to do so is available.

The final grade earned on the pretest and the posttest will be averaged. The numeric average will serve as the final grade and will be posted directly to the transcript in a separate column indicating that the credit was earned through credit advancement. Credit advancement course are not weighted.

Students who earn a credit in English 10 and/or Algebra I through this program will be required to sit for the respective Quality Core exams.
TUSCALOOSA COUNTY VIRTUAL LEARNING CENTER

There is not a limit on the number of credits that a student can earn through credit advancement. All rising ninth grade through twelfth grade Tuscaloosa County School System students are eligible to attempt credit advancement. Students will be permitted to attempt credit advancement one time per course, per academic year. Credit advancement exams can be taken within the first five days of each semester, the last ten days of each semester, and during the month of June. Students should contact their school’s credit advancement coordinator to schedule an appointment to take credit advancement exams.

Admission and eligibility requirements of various organizations are subject to change, and it is the student’s responsibility to consult with outside organizations such as universities, the Alabama High School Athletic Association, NCAA, etc. to determine how credits earned through this program might affect eligibility, admissions, or status. Any credit obtained for a course through this program is not approved by NCAA.

Credit Acceleration – Obtaining Credit

This program allows students who may need or want to take a course for additional credit. Students can attempt credit obtainment in math, English, science, social studies and elective classes. Unlike credit advancement, students will take the course in its entirety; therefore, a pretest will not be administered. Credit obtainment is an alternative to the traditional approach to course completion. Students eligible for credit obtainment will be a transfer student whose deficit in the required credit(s) is not due to failure of the course OR be a student who exhibits the desire to earn more than the traditional credits allotted in the school year. Using this program, students must take the entire course and the course is not weighted. Instruction will be provided non-traditionally. Students who attempt English 10 and/or Algebra I through this program will be required to sit for the respective Quality Core exam. There is not a limit on the number of credits that a student can earn through this program.

Admission and eligibility requirements of various organizations are subject to change, and it is the student’s responsibility to consult with outside organizations such as universities, the Alabama High School Athletic Association, NCAA, etc. to determine how credits earned through this program might affect eligibility, admissions, or status. Whether or not a credit obtained for a course through this program is approved by NCAA depends on how the instruction is provided. For example, a course taken through ACCESS Distance Learning is approved by NCAA, but a course taken through the Tuscaloosa County Virtual School is currently not approved by NCAA.

Recovering Credit

In accordance with guidelines released by the Alabama State Department of Education, the Tuscaloosa County School System will offer students who have received failing grades in courses that are required for graduation an opportunity to recover the lost credit through a standards-based approach that will target specific knowledge and skill deficits instead of requiring students to repeat the entire course. Students who qualify may apply to their school counselors to enroll in the program. In order to be accepted students will:

- Have an overall average of 40-59 in the course they seek to recover credit;
- Not have lost credit due to violation of the non-compliance policy (excessive unexcused absences);
- Will only complete the objectives from the course that caused them to fail. This prevents the student from having to redo the entire course and allows them to recover the lost credit in a much shorter time frame.
- Complete an application signed by both students and parents/guardians;
- Provide their own transportation to Credit Recovery classes when attending the after-school sessions;
- Pay $100.00 course fee. (Note: Fees are subject to change.)
- The maximum grade a student can receive in Credit Recovery is a 60.

Transfer students from non-SACS accredited schools who fail the validation tests with a score of 40-59 for any core courses are also eligible for Credit Recovery. Admission and eligibility requirements of various organizations are subject to change, and it is the student’s responsibility to consult with outside organizations such as universities, the Alabama High School Athletic Association, NCAA, etc. to determine how credits earned through this program might affect eligibility, admissions, or status. Any credit obtained for a course through this program is not approved by NCAA.
TUSCALOOSA COUNTY VIRTUAL LEARNING CENTER

Repeating Credit
This program is primarily for those students who made less than a 60 in the class they failed. Using this program, students must retake the entire course. Instruction may be provided traditionally or non-traditionally. Also, students who are eligible for Credit Recovery, but want to try and achieve higher than a 60 on their transcript for a course they failed may choose this option because students will be expected to complete all objectives from the course they failed. Admission and eligibility requirements of various organizations are subject to change, and it is the student's responsibility to consult with outside organizations such as universities, the Alabama High School Athletic Association, NCAA, etc. to determine how credits earned through this program might affect eligibility, admissions, or status. Whether or not a credit obtained for a course through this program is approved by NCAA depends on how the instruction is provided. For example, a course taken traditionally or through ACCESS Distance Learning is approved by NCAA, but a course taken through the Tuscaloosa County Virtual School is currently not approved by NCAA.

HOME-BASED EDUCATION
Home-based education is a legitimate alternative to classroom attendance for the instruction of children. Students seeking to earn a TCSS high school diploma must be enrolled in TCVLC.

STUDENT EXPECTATIONS

- Orientation
  Prior to enrolling in Tuscaloosa County Virtual Learning Center students will participate in an orientation to inform and better prepare them and their parents/legal guardians to be successful in their virtual learning.

- Technology
  Students will need to have daily access to a computer and internet access for online learning. In the event that students do not have access to the required technology, the Tuscaloosa County School System will provide a system owned device. It will be the responsibility of the student and/or parents for acquiring and maintaining daily access to the internet. Students will be expected to adhere to the Tuscaloosa County School System’s Acceptable Use Policy.

- Attendance
  When a student logs in to class, he/she is considered present for that class. Staff will monitor that students “participate” daily in their classes. Students are encouraged to work at their own pace but on a daily basis.

- Assessments
  Student will have to pass the required assessments to demonstrate that the course has been completed and the objectives and standards have been met.

- Counseling
  Students will be provided counseling support to assist them in the development of their Individual Learning Plans, and support them as they achieve their educational goals.

- Resources
  Students will be required to participate in webinars and face-to-face learning sessions relative to research, digital citizenship, plagiarism and other topics provided by the library media specialist and/or other staff.

STUDENT ASSESSMENT
Students will be required to participate in all local and state mandated assessments. Students must sit for these assessments on the dates and times set by the Tuscaloosa County School System. Students will be required to provide their own transportation to and from the testing site.
TUSCALOOSA COUNTY VIRTUAL LEARNING CENTER

EXTRACURRICULAR ACTIVITIES AND ATHLETICS
These are not available at this time.

SPECIAL SERVICES
The Tuscaloosa County School System will provide reasonable accommodations for targeted students; however, it is the I.E.P. committee that determines the most appropriate placement for meeting the special education student's needs.
## Service Learning – Career and Technical Education Rubric

<table>
<thead>
<tr>
<th></th>
<th>5 Exceptional</th>
<th>4 Excellent</th>
<th>3 Good</th>
<th>2 Fair</th>
<th>1 Needs Help</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reflection</strong></td>
<td>Relates to multiple contexts.</td>
<td>Reflection efforts demonstrate clear understanding.</td>
<td>Finds most of the main points.</td>
<td>Misses two or three main points.</td>
<td>Unable to express main points.</td>
</tr>
<tr>
<td><strong>Student Engagement</strong></td>
<td>Sees possibilities for future personal endeavors.</td>
<td>Identifies and explores personal relationship to concept or issue.</td>
<td>Can find some points of personal engagement.</td>
<td>Points of personal engagement are vague.</td>
<td>Unable to find any points of personal engagement.</td>
</tr>
<tr>
<td><strong>Ability to Apply Knowledge</strong></td>
<td>Recognizes multiple levels of impact: globally, nationally, and locally.</td>
<td>Application of knowledge in varied settings.</td>
<td>Applies knowledge in some settings</td>
<td>Knowledge applied with some help.</td>
<td>Unable to apply knowledge.</td>
</tr>
<tr>
<td><strong>Ability to Articulate Knowledge</strong></td>
<td>Student can teach others concepts of learner outcomes.</td>
<td>Student can apply and articulate knowledge outside the classroom.</td>
<td>Student can explain some concepts.</td>
<td>Students can articulate learning outcomes with some help.</td>
<td>Unable to articulate learning outcomes.</td>
</tr>
<tr>
<td><strong>Measurable Assessment</strong></td>
<td>Indicates multiple avenues of understanding.</td>
<td>Student indicates knowledge through evaluation.</td>
<td>Student indicates some knowledge through evaluation.</td>
<td>Knowledge indicated through evaluation is vague.</td>
<td>Unable to indicate knowledge through evaluation.</td>
</tr>
</tbody>
</table>

Rather than addressing a specific academic content, this rubric offers a way to assess student achievement of several common, overarching service-learning goals.
## Service Learning – Career and Technical Education Rubric

<table>
<thead>
<tr>
<th>Criteria and Qualities</th>
<th>Beginning</th>
<th>Developing</th>
<th>Accomplished</th>
<th>Expanding</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiative/Productivity</td>
<td>Student shows little or no attempt in meeting his/her proposal even when prompted.</td>
<td>Student almost meets his/her proposal yet shows effort in his/her attempt.</td>
<td>Student meets the expectation of his/her proposal in a timely manner.</td>
<td>Student willingly accepts additional responsibilities and takes his/her original commitment beyond expectations finishing before deadline.</td>
<td>Up to 25 points</td>
</tr>
<tr>
<td>Social Interaction</td>
<td>Student makes little or no effort to interact with service recipients and his/her peers.</td>
<td>Student interacts with his/her peers but not with service recipients.</td>
<td>Student makes a good effort in getting to know the service recipients and his/her peers.</td>
<td>Student makes a sincere effort to create a relationship with service recipients and his/her peers.</td>
<td>Up to 25 points</td>
</tr>
<tr>
<td>Teamwork</td>
<td>Student shows little or no effort to contribute to the goals of the group and to the project.</td>
<td>Student makes an effort to contribute only when prompted and shows minimal flexibility to compromise with the ideas of the group.</td>
<td>Student contributes to the group goals and is flexible to compromise with the ideas of the group.</td>
<td>Student offers several ideas to the project, is receptive to compromise with the ideas of the group, and goes above expectations to meet the goals of the group.</td>
<td>Up to 25 points</td>
</tr>
<tr>
<td>Preparation</td>
<td>Student meets less than 60% of his/her objective and fails to achieve them in the agreed time frame.</td>
<td>Student makes an effort to achieve objectives and meets less than 50% of them in a reasonable time frame.</td>
<td>Student pursues and meets objectives of the projects.</td>
<td>Student establishes clear objectives and strategies and adapts strategies to meet objectives in a timely manner.</td>
<td>Up to 25 points</td>
</tr>
</tbody>
</table>

Rather than addressing a specific academic content, this rubric offers a way to assess student achievement of several common, overarching service-learning goals.