

COE Program Outline (Draft)

1) Policy Statement from Dean

I want to congratulate you on your decision to volunteer to participate in one of the many student contest/project teams sponsored annually by the Samuel Ginn College of Engineering. Our College has enjoyed a nationwide reputation from the hard work of students, like you, who work so tirelessly to compete with some of the best engineering schools in the Nation. These competitions provide a showcase, in which you can demonstrate your engineering skills, ability to function in a team environment, and represent your College and University. Though these projects provide opportunities for real world, hands on project design and construction, they also potentially expose you to a number of significant risks and hazards associated with the materials and processes intrinsic to your specific project/contest. As such, I have established a formal policy that I expect all students, staff, and faculty of the Samuel Ginn College of Engineering to adhere to at all times while involved in all project aspects. Once again, welcome to your team, and please accept my best wishes for your continued success in the College of Engineering.

Larry Benefield, Dean

2) Purpose + Intro

As part of continuing efforts to provide a safe place for students, staff, faculty, and visitors to participate in the many student contest/project teams, the Samuel Ginn College of Engineering is implementing a new safety program. The purpose of the program is to define the safety policy for all students, staff, and faculty who participate in student contest/project teams sponsored by the College. The program formally introduces safety as an important and integrated element of any contest/project. Participants must adhere to this program as part of the responsibilities associated with team participation.

3) Scope

This policy applies to all students, faculty, and staff associated with the Samuel Ginn College of Engineering at Auburn University. The policy also pertains to sponsors, contractors, sub-contractors, and visitors (official or unofficial) associated with project or contest activities, which may include, but are not limited to:

- a) *Design work.* All work performed during the design portion of a project prior to production, such as computer activities, review of previous designs, prototyping, etc., must comply with this program.
- b) *Shop work.* This program applies to all activities, both essential and non-essential to the project, conducted in and around university labs, workshops, and other facilities, including the use of equipment for production elements of the project.
- c) *Field tests.* Field tests conducted by team members on or off campus are covered by this program, including travel to and from test locations.
- d) *Traveling.* All team members engaged in official project travel are covered by this program regardless of whether they are performing project-related tasks,

resting, recreating, etc. This includes activities in transit to and from competitions or test sites and the duration of the competition or test activity itself.

This program does not pertain to work performed entirely by a third party organization off of Auburn University's campus. Also, participation in some aspects of the project team activities may require skills or training not provided or supervised by this program. In such cases, the Faculty or Staff Advisor will determine the In addition, this program does not supersede any applicable policies or programs instituted by Auburn University, sponsor organizations or enforcement agencies with applicable jurisdiction. All such policies must also be followed in their entirety, as well.

4) Roles & Responsibilities

- a) Students: Each student plays a major and significant role in preventing accidents and injuries during the lifetime of the contest/project. Direct responsibilities resting with the *students* include:
1. Understand and follow all **safety rules and procedures**.
 2. Ensure that other team members understand and follow the same **safety rules and procedures**.
 3. Plan and conduct each activity in accordance with the **program**.
 4. Ensure that tools and equipment are in good working order, and appropriate for your intended use. Clearly, we are trying to avoid using screwdrivers as pry bars and chisels, wrenches as hammers, or any other creative, and more importantly, hazardous misuse of tools and/or equipment.
 5. Never work alone in a shop environment. Ensure that at least two team members are present at all times.
 6. When working after hours, or when working out of the proximity to a shop, ensure that at least one cell phone in good working order is present, in case emergency help needs to be requested. The ability to communicate clearly and quickly is the key point.
- b) *Team Captain(s)*: On some of the larger teams, the *Faculty/Staff Advisor (Advisor)* often selects a senior, experienced, and motivated student to function in the role of *Team Captain*. With this prestigious position comes a significant amount of responsibility in a number of areas, including safety. The *Team Captain* is a leadership position, and as such, this individual must always follow each **safety rule** in its entirety. It is incumbent on the *Team Captain*, to enforce **safety rules** on every other team member. The *Team Captain* is a direct representative of the *Advisor*, and must act accordingly when **safety rules/issues** arise.
- c) *Faculty/Staff Advisor (Advisor)*: The role of the *Advisor* is to administer and manage the safety rules and procedures. Responsibilities include:
1. Ensure the safety of all faculty, staff, students and visitors associated with the project work.

2. Ensure that participating students, faculty, and staff, fully understand, follow, and adhere to the **program's rules and requirements**.
 3. Conduct regular inspections to ensure adherence to **program requirements**.
 4. Promptly facilitate corrective actions to mitigate safety hazards or unsafe behaviors identified during safety and health audits completed by Advisor and RMS.
 5. Ensure that students are appropriately trained on hazard recognition and are aware of risks associated with project work.
 6. Ensure that students fulfill the **training requirements** as posted in the training modules.
 7. Notify the appropriate Auburn University contact in case of First Aid, or medical emergencies. Work in conjunction with *RMS* to conduct prompt investigations of any accidents or incidents and ensure corrective actions are taken to prevent recurrence.
 8. Identify **safety requirements** intrinsic to the project being undertaken. Provisions should be made for constructing prototypes, manufacturing the project, testing the product, transportation to and from the contest site, and actual performance in the contest. As such, specific safety responsibilities (may be called for in the contest rules) and an appropriate safety budget (typically 4% of the project cost, not to exceed \$3,000 unless detailed justification is provided) should be requested as part of the overall project budget.
 9. The *Advisor* must ensure that safety related training is identified early in the project period (should be coordinated with *RMS*), provisions are made to advise (demonstrate) the team of the WebCT safety training resources available online, and the training is scheduled, and completed, and documented in a timely and correct fashion.
 10. The *Advisor* must consider the *RMS Staff* as a safety resource, and not hesitate to request assistance, or clarification, on any safety related issue.
 11. Submission of a final report (online) addressing safety issues experienced during the course of the project such as, budget requirements, near misses, lessons learned, whether certain training is actually necessary, etc...
- d) *Visitors (others)*: It is the Advisor's responsibility to ensure the safety of all visitors to the team workplace. Children are prohibited from entering any workshop unless prior approval has been obtained from the *Advisor*, and the *Advisor* has assured that hazards have been reduced to a safe level to minimize the risk of injury to children. Active project work should be discontinued during all times visitors are present in a shop or project area.
- e) *Oversight Committee*: The Committee consists of a *RMS representative*, former or current *Advisor(s)*, former team *member(s)/alumni*, and a practicing *safety*

professional. The *Committee* will meet at least twice a year (in conjunction with Alumni meetings), and its responsibilities include:

1. Assess, evaluate, and update the safety **program** for the College on an annual basis.
2. Review proposed, current, or completed projects to ensure that:
 - a. Hazards are (were) adequately identified;
 - b. Controls are (were) established to minimize all identified hazards;
 - c. Personal protective equipment needs are (were) identified;
 - d. Funding is (was) appropriate to meet **safety needs** of specific projects.

A mechanism to implement the committee's suggestions should be in place by the time it is formed. The selection process of the *Committee's* members needs to be explored further. *Committee* members will be assigned to three (3) year terms, with approximately one-third of the *Committee* members being replaced annually to ensure continuity of experience.

- f) *Dean, Samuel Ginn College of Engineering*: The *Dean* is responsible for all aspects of safety within the College, as it pertains, to student team projects. The *Dean* has the authority to delegate the oversight of the program to an *Associate Dean* within the College. The *Dean* must review and approve an annual report summarizing student team safety related matters annually. This report will be submitted by the *Committee* with input from *RMS*, *Advisors*, and other knowledgeable personnel.
- g) *Associate Dean, Samuel Ginn College of Engineering*: The day-to-day responsibility of administering to the **safety program** rests at this level. The *Associate Dean* has a number of resources available to himself with these responsibilities. These include liaison with the *RMS Staff*, interaction with the *Oversight Committee*, and supervision of the *COE Safety Engineer*. The *Associate Dean's* responsibilities include:
 1. Lead the safety effort within the College.
 2. Make recommendations to the *Dean*, or act on his/her behalf, about which projects to pursue, or defer, based on risk expectations and other project considerations.
 3. Ensure project budgets include appropriate safety funding.
 4. Ensure the COE Safety Team Project website is maintained in a professional and current manner.
 5. Attend, or designate a representative to attend, the semi-annual *Oversight Committee* meetings.
 6. Review and approve the annual report prior to sending it forward to the *Oversight Committee*.
 7. Enforce all safety rules and policies on behalf of the *Dean*.
 8. Supervise the *COE Safety Engineer* in the performance of his/her duties and responsibilities.
 9. Ensure necessary resources are appropriated to ensure longevity and viability of the COE safety project.

10. Act as the College representative in manners related to safety when dealing with outside agencies.
- h) *Department of Risk Management & Safety (RMS)*: *RMS* is responsible for development, implementation and oversight of safety and health programs for Auburn University. Specific *RMS* responsibilities associated with this program include:
1. Act as primary point of contact for consultation and resolution of safety and health issues.
 2. Participate in review of proposed projects from a safety and health perspective prior to final approval of projects to commence.
 3. Coordinate periodic review of program and make recommendations to the *Oversight Committee* on appropriate modifications (bi-annually).
 4. Perform periodic inspections of project work areas to ensure safe conditions are maintained.
 5. Provide, or coordinate training, on topics not covered in the team safety course.
 6. Assist *Advisors* in conducting accident investigations and determining appropriate corrective actions.
- i) *COE Safety & Health Specialist*: The day-to-day responsibility of providing safety support to the *student* teams rests at this level. The *COE Safety & Health Specialist* will report directly to the Associate Dean on all safety related matters. The *COE Safety & Health Specialist* responsibilities include:
1. Be involved at the *student* team level on a regular basis to address all safety related issues.
 2. Work with *Advisors* (and Departments) to evaluate potential projects and ascertain associated safety requirements.
 3. Meet with *Advisors* and team *members* to discuss safety aspects of potential, and/or current projects. This will include attending team meetings on an as needed basis to conduct training, or to discuss safety issues.
 4. Assist team *members* to comply with the COE safety policies.
 5. Work with other COE staff to update and maintain the COE Safety project website.
 6. Order, inventory, maintain, disseminate, and collect all Personal Protective Equipment (PPE) associated with team projects.
 7. Perform daily inspections of all shop and project spaces to determine the status of compliance with safety rules and guidelines.
 8. Perform hazard identification, prioritization, and abatement within COE shop and project spaces on a routine basis.
 9. Be available (beeper) to answer any safety related questions associated with COE student team projects.
 10. Draft the annual student team safety report for the *Associate Dean*, and attend the *Oversight Committee* meetings.

11. Work with *RMS Staff* to address other safety issues (non-team related) within the COE.
12. Other duties as required by the *Dean* of Engineering.

5) Administration

a) *Project Approval*

i) Applications for New Projects/Contest Participation

All new student projects/new participation in student contests must be approved by the Dean and the Oversight Committee prior to commencement. The following steps must be followed to obtain approval for a new project/contest:

- 1) Advisor completes the Request for Student Team Competition Form (found at the Samuel Ginn College of Engineering Student Team Competition resource website) and submits to the Associate Dean. This form includes information on:
 - a. General nature of project
 - b. Competition location and dates
 - c. Number of students involved
 - d. Advisor(s)
 - e. Required resources, sources of sponsors and funding
 - f. Contest announcement and regulations
- 2) Associate Dean reviews and forwards documentation to the Oversight Committee.
- 3) Associate Dean contacts the Advisor, providing:
 - a. Tentative determination of support from the College for the project.
 - b. Information on amount of financial support that will be provided by the College.
 - c. Information on how space needs will be met.
- 4) Oversight Committee contacts Advisor to request additional information on the processes, equipment, and materials that the team will be using in development and transportation of the prototype device.
- 5) Advisor completes the Equipment, Materials and Process Form (found at the Samuel Ginn College of Engineering Student Competition Team resource website) and submits to the Oversight Committee.
- 6) Oversight Committee reviews the Equipment, Materials and Process Form to determine:
 - a. Training requirements
 - b. Applicable shop safety rules and requirements
 - c. Additional safety consultation needed for new or unusual processes, equipment and materials.

b) *Periodic oversight*

- i) The COE Safety & Health Specialist will be responsible for regular safety and health oversight for all COE projects/contests, including weekly inspections of shop and project areas for adherence to program requirements. The COE Safety & Health Specialist will consult with RMS to facilitate resolution of issues that can not be directly resolved by the Specialist.
 - ii) RMS will perform safety and health audits of team work areas at least once per year. More frequent audits may be conducted based on the nature of the work being performed, results of past audits, or accident/incident history. All audit results will be communicated to the Advisor and COE Safety & Health Specialist, and will include recommended corrective actions necessary to mitigate hazards or unsafe work practices observed. Follow up evaluations will be made to ensure that corrective actions are correctly implemented in a timely manner.
 - iii) Associate Dean/Dean – oversight responsibilities
- c) *Supervision*
- i) *COE Design & Manufacturing Lab (DML)*: If the COE DML will be used for project construction:
 - (1) Specific arrangements must be made with the Lab Manager for hours of use and approval to use specific equipment.
 - (2) The Lab Manager will ensure that proper supervision is present during project work in the DML.
 - (3) Team members must follow all rules and requirements set forth by the Lab Manager.
 - ii) *Designated Team Work Spaces*: If dedicated space is provided for project work, the Advisor will ensure that team members never work alone. At least two team members must be present at all times when project construction is taking place.
- d) *PPE*
- i) PPE needs will be determined prior to commencement of the project, and must be identified in the project proposal.
 - ii) The cost of PPE for all team members will be included in the initial project budget as a part of the safety budget. PPE appropriate to each team member's duties will be provided at no cost to the team member, with the exception of prescription safety glasses or safety boots when required. All or a portion of the cost of prescription safety glasses or safety boots may be covered by the project budget at the discretion of the Advisor.
 - iii) PPE will be replaced as necessary at no cost to the team participants.
 - iv) PPE will be properly maintained in clean, working condition.
 - v) All team members are expected to wear PPE appropriate for the task being performed at all times.
 - vi) RMS must be consulted if a determination is made that respiratory protection must be worn (including dust masks). Personnel who are required to wear respiratory protection must have a fit test performed to ensure proper fit.

Depending on the type of respiratory protection, enrollment in the Medical Surveillance Program may be required.

e) *Training requirements:* Training is a fundamental part of this Program.

Essentially, the Program views training at three (3) levels of requirements.

1) Basic training requirements on operating machinery and equipment use including shop safety:

Students who join a project must demonstrate a mature level of training and skills to operate machines and equipment in the shop prior to the operational stage of their project. This level of training, including should be **approved by the COE Shop faculty/staff**.

2) Basic safety training requirements on safety related issues associated with participating in a student team project:

Since the nature of the contests dictate a heavy involvement in operating processes, equipment, testing, and traveling to events, all team members must take and complete a set of basic safety training modules. The Program maintains the safety modules on its website. After training, students are tested on their knowledge of the training by taking short quizzes to demonstrate their understanding of safety related issues. The faculty/staff advisor administers and verifies the training procedure and schedule.

3) Advanced training requirements targeted to specific individuals involved in certain critical activities in projects:

Team members with specific and advanced training requirements should coordinate with RMS for further details.

f) *Recordkeeping:*

g) *Insurance requirement:*

h) *Accidents/Incidents*

Accidents and incidents are those involving injuries/illnesses, spills/releases, property damage and near misses.

i) Reporting

(1) Team participants must report all accidents and incidents to the Advisor and COE Safety & Health Specialist immediately.

(2) The Advisor must report all accidents and incidents to Risk Management & Safety as soon as possible, but no later than 72 hours after the event.

Form to be used

ii) Investigation

(1) All accidents and incidents will be investigated by the Advisor, with assistance from the COE Safety & Health Specialist and/or RMS as necessary.

(2) Corrective actions will be identified to mitigate the hazards found to be contributing factors to the accident/incident. Corrective actions will be promptly implemented.

iii) If a serious injury or death occurs, what do you do?

i) *Project completion reports:*

j) *Transportation:* Team travel is often required for several aspects of projects/contests, including field tests, sponsor events and competitions.

- i) *Vehicles*
 - (1) Whenever possible, University vehicles will be used for team travel.
 - (2) The Advisor is responsible for locating appropriate vehicles for safely transporting team members, project equipment and necessary supplies to all events.
 - (3) 15-passenger vans
 - (a) Use must be consistent with the requirements of the AU 15-Passenger Van Policy and Procedures.
 - (b) Must not be used for towing.
 - (4) Towing
 - (a) Appropriate vehicles, designed to be used for towing and capable of hauling the load, must be used.
 - (b) Personal vehicles must not be used to tow University trailers.
- ii) *Liability Issues*
 - (1) If non-University vehicles are used for team transportation, the owner(s) of the vehicle(s) will be responsible for liability in the event of an accident and must sign a waiver to document their understanding of this.
 - (2) All participants traveling to team events must hold a harmless agreement prior to the event.
 - (3) Any medical expenses incurred due to illness or injury during team travel will be borne by the individual. AU will not be responsible for these costs.
- k) *Disciplinary action:* All team members are expected to follow the requirements set forth in this program at all times. Disciplinary action will be taken, up to and including suspension from team participation, based on the nature and severity of the violation.

6) Case Study

7) Resource List:

- a) OSHA's website
- b) Other helpful lists
- c) RMS website
- d) Should have a COE projects website, to include:
 - i) Project approval forms
 - ii) COE Team Safety Program
 - iii) Link to WebCT course
 - iv) Overview of expectations for teams
- e) *Links to other applicable programs:*