



New Candidate Package

New Team Member Checklist

MEMBER INFORMATION

Name: \_\_\_\_\_ Subsystem: \_\_\_\_\_
Date Assigned / Deadline: \_\_\_\_\_
Email: \_\_\_\_\_ Start: \_\_\_\_/\_\_\_\_ End \_\_\_\_/\_\_\_\_

TEAM POLICIES

- Reviewed team policies. Agreement Form
Shop Policies
Operating Machinery
Anti-harassment
Office Policies
Team property (Software/Licenses)
Security
Emergency procedures
Line of Command
Building Access
Meetings

NEW CANDIDATE ASSIGNMENTS

Read the Formula SAE 2018 Rules
Signed \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_
Subsystem Assignment
Signed \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_
SolidWorks CAD Assignments (separate package)
Introductory Assignment 1.0
SolidWorks Simulation (FEA) Basics 2.0
SolidWorks Assembly and Drawings 3.0
Score \_\_\_ Signed \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_
Manufacturing Assignments
Learn basics of machining (Mill, Lathe, Layups)
Machine: \_\_\_\_\_ Initial \_\_\_\_ Date \_\_\_\_/\_\_\_\_
Basic Shop Tools
Work fundraising event
Event 1 \_\_\_\_\_ Signed \_\_\_\_\_
Dues Paid: Signed \_\_\_\_\_ Date \_\_\_\_/\_\_\_\_ Early [ ] Regular [ ]

CONTACT INFORMATION

Table with 4 columns: Name, Title, Phone, Email. Includes Shawn Sandhu, Patrick Jakubowski, Madeline Bowne, Siddarth Patel, James Vertes, Zachary Joseph.

Retain this sheet to keep track of progress through the candidacy process. Present this form when all assignments are completed to the President or respective buddy at your final meeting.

Completed New Candidacy Program on: \_\_\_\_\_
Director's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



## Introduction to FSAE

**What is Formula SAE?**

Formula SAE (Society of Automotive Engineers) is a student design competition, where a scaled-down formula style race car is designed, constructed and used to compete in multiple events at competitions all over the world. The scaled-down formula car is to be evaluated for its potential as a production item. The target marketing group for the race car is the non-professional weekend autocross racer. The car is built based on a series of rules whose purpose is both to ensure onsite event operations and encourage topical problem-solving. The Formula SAE event includes various business-related events as well as engineering events. Formula SAE prepares students for careers in engineering by providing real world experience, and creating an environment where all aspects of the automotive industry are encompassed, including design, manufacturing, marketing and sales. The competition is broken down into both static and dynamic events. Points are allotted up to a total score of **1,000 points**, dependent upon how well the team performs in each of the events listed below:

**Static Events**

- Business Presentation **75 points**
- Design **150 points**
- Cost **100 points**
- Technical Inspection **0 points**

**Dynamic Events**

- Acceleration **100 points**
- Skid-pad **75 points**
- Autocross **125 points**
- Fuel Efficiency **100 points**
- Endurance **275 points**

**TOTAL: 1,000**

**About Rutgers Formula Racing**

Rutgers Formula Racing (RFR) is a high demanding, high outputting, and illustrious academic organization that serves as a platform for engineering students to gain invaluable knowledge and skills that reach far beyond the realm of the classroom and curriculum. Every year, we participate in the United States Formula SAE (FSAE) Collegiate Design Series. It consists of two competitions, for which we engineer, manufacture, test, and tune a small formula style racecar governed by FSAE rules.

The team consists of 20-30 dedicated members, who design, build and then analyze data from real world testing of their formula style racecar. The students range in age and vary between all grade levels within the undergraduate and graduate programs at Rutgers University. Being a part of the team requires an enormous amount of time, effort and persistence that is unmatched by another organization at the university. Thanks to the nature of the organization, members become immersed in a "real world" scenario that gives them experience and knowledge that would otherwise be impossible in the classroom.

At Rutgers Formula Racing, the team strives to function as a professional engineering team. We use advanced analysis and modeling techniques and software, as well as perform tests with the car in order to make informed future design decisions. The team is broken up into executive positions such as President, Vice President, Treasurer, and Chief Engineer. To further manage projects and vehicle subsystems, positions such as Design Lead, Manufacturing Coordinator, Aerodynamics Lead, Chassis Lead, Powertrain/Drivetrain Lead, Suspension Lead, Composites Lead, Electronics Lead, Brakes Lead, Ergonomics Lead, Business Lead, and Website/Social Media Coordinator are delegated. These positions are filled by dedicated team members who are chosen by team vote at the start of each year. Team members outside of the design leadership are also essential to the completion of the car, aiding in machining projects throughout the year and final assembly. The team aims to be welcoming, and will teach members all they need to know to be a valuable asset to the car and team.

We strive to be one of the top teams at competition each year. Every year brings new challenges and new innovations. The team has established itself as a very successful FSAE team in years past, and hopefully years to come as well. RFR has won several awards since its establishment in 1989 to prove it.



## Candidates

Each new candidate must pay a **nonrefundable** fee of \$150 to an E-board member. This fee is reduced to \$130 with an early submission on or before October 1<sup>st</sup>, 2017. As a member, you are responsible for the team's progress and success. You are expected to be working actively in the office and shop throughout the season. If your personal schedule conflicts, you are required to inform team leaders of your availability. Your success is directly related to the quality and quantity of work done within RFR.

You will be assigned various projects to a given subsystem(s). It is your responsibility to work with the corresponding sub-team lead (and occasionally with other leaders) to agree on designs, deadlines, and execution. If you face difficulties meeting the requirements or deadlines of a project, inform your supervisor immediately. Your supervisors will work with you to overcome the difficulties and to ensure that the project stays on track. When your overall progress or attendance is unsatisfactory the supervisor overseeing the project will contact you. Failure to respond promptly, unless in a unique situation, reduces privileges. If two attempts to contact you fail, the business sub-team lead or E-Board will contact you. Failure to respond promptly; will result in your termination from the program. You are responsible for the completion of these projects, and failure to do so can also result in termination from the program. These projects are not the only expectation of a full-time member. The completion of your assigned projects does not justify lack of attendance or participation. Once there are three weeks left in the two-month new candidacy period, you will receive a reminder email that time is about to expire. If you have not finished the candidacy program at the three-week point, you will become a probationary member. If no contact has been made, then it is assumed that you will not follow through with the program. There are special circumstances that will allow you to extend the candidacy period past two months, but be sure to contact your respective director/leadership in these cases. Allowance on an extension of the candidacy period will be based on your effort to be present in the shop and to show forward progress in the new candidacy program.

All work completed during your membership with Rutgers Formula Racing is the property of the team. At the end of each month you are required to update a personal folder on the main computer with all of your CAD drawings, documents, media, etc. This will also act as a backup for your files in case of an emergency.

## Full Time Membership

As a full-time member, you are still responsible for all duties stated above and are now entitled to the benefits of being on a Formula SAE team. On your resume you may officially state that you are a member of Rutgers Formula Racing and Formula SAE. Please consult the team's leadership or your director to ensure you state the proper information about your involvement. As a full-time member you are now eligible to compete at international SAE events. Due to the size and budget of the team, not all students can be accommodated for competitions. Before competition, the directors and team leadership will figure out the maximum number of people that will be able to attend competition. Your continuous commitment to the team will ensure your place at these competitions. You are also now eligible to run for a leadership position. Elections are held at the end of the competition season, but an exact date will be determined by directors.

### Full Member Benefits:

- Ability to cite Rutgers Formula Racing on resume
- Competition eligibility
- Full apparel store
- Access to alumni base
- Opens doors to more advanced projects
- Access to team drive and design data
- Driving eligibility



## Team Policies

## Shop Policies

1. **Safety First** - Always wear personal protective equipment (PPE) in the shop. Members operating any kind of machinery, welder, or hand tools must wear the proper PPE. This also means **NO** open-toed shoes (e.g. sandals, flip flops), ties, loose/long sleeves, or jewelry while operating machinery. Also, long hair is required to be tied back or worn in a hat.
2. **Clean the machines** - After machinery use, put away any tools in their proper place. If you notice equipment out of place that is not in use or specified to remain there, return it to its proper location.
3. **Proper machining techniques** - Do not use any of the machines without training and approval of team's leadership. When operating the machines, be sure to use caution and be aware of your surroundings.
4. **No food is allowed in the shop.** Only closed lid drink containers can be brought into RFR facilities.
5. **Turn off machines** - Be sure to turn off any machinery and clean your shop workstation after your work is completed. Properly store any scrap metal or excess material. If you are the last individual in the shop or office, check all doors to ensure they are locked. Also check all machinery to ensure they are powered off.

## Office Policies

1. In the office it is **your duty to clean** your workstation after each use and dispose of any loose trash. Do not leave your belongings on the tables, chairs, or couches without the approval of the team's leadership. This office space is shared by the team.
2. **Core Design Hours** - During the core office hours, any member present in the office must be utilizing the space to work on team's progress for the season (Designing, Manufacturing, or Researching)
3. Large meals **must be** eaten outside of the office. And all personal food stored in the office must be dated and discarded after a week. Also, when eating in the shop, be sure to clean up any spills or food ware.
4. **Please report** any unsafe use of machinery or tools to leadership. Also, **please report** any broken equipment to leadership. This is for your safety and the safety of other team members.

## General Policies

1. Rutgers Formula Racing is all about having fun, however, any kind of **harassment will not be tolerated.** We try to keep a safe working environment, where everyone feels welcomed.
2. **Emergency Procedures** – In the case of a fire or any other legitimate evacuation, leave your belongings as procedure dictates but shut the doors on your way out. Also in the case of a legitimate emergency in or near the shop, call RUPD police (9-1-1) first and then follow up with a direct (Facebook or text) message to the leadership and team so all are aware.
3. **Building Access** – Only team leaders and experienced members have access to the building. New members are welcome when one of the previously stated members is present. Please contact an experienced member for access to team facilities.
4. **Security** – There are a lot of expensive items in and around the shop. Please report any suspicious activity to leadership. For any emergency please call RUPD.
5. **Revision Log** – Full time members will gain access to the team Asana account and Google Drive. All added and altered files MUST be included in the revision log.
6. **Line of Command** – The Line of Command represents the order of people you should contact if you have questions or concerns. The order is as follows 1.) Buddy/ Other full-time member 2.) Subsystem Captains 3.) E-Board
7. **Team Property** - Everything is the team's property, including design work, manufactured parts, CAD. Tools from sponsors, material from any source, etc. belong to Rutgers Formula Racing, unless discussed otherwise amongst leadership.
8. **Personal belongings** need to be neatly put away, out of the walkways and off of working space.
9. **Software Use** – Once a full-time member, you will be granted access to various design programs. This is not a right, but a privilege, so please use the licenses appropriately.
10. **No Alcohol** (or any other recreational drug) in and around RFR facilities at any time.
11. **Driving Eligibility** – Full members active on the team for one year are eligible to participate as a driver at drive-days and competitions. Competition driver selection is unbiased – it is based purely on time and consistency, not seniority.
12. **Meetings** – General Meetings will be held once a week on a weekday, at 9pm. **The exact day will be announced after the general interest meetings.** Subsystem specific meetings will be held by sub-system leaders on a weekly basis. As a new member, you are encouraged to attend as many meetings from as many subsystems as you like. Design meetings are to be held every other day, with updates from team leaders. Sub-team and design meeting dates and times will be posted in advance or consistently.



Name: \_\_\_\_\_ Email: \_\_\_\_\_ Phone: \_\_\_\_\_

### Acceptance of New Candidacy Process, Policies and Liability

#### Candidacy Process Acceptance

I, \_\_\_\_\_ (Print Name), accept the responsibilities of becoming a Formula SAE candidate with Rutgers Formula Racing. I understand the candidacy process and all that is required of me to become a Full-Time Member of Rutgers Formula Racing. I also understand that if I do not complete the candidacy process within two months, I will have to start the candidacy process over. I understand that the \$150 new candidate fee is non-refundable.

#### Team Policies Agreement

I, \_\_\_\_\_ (Print Name), have read the team policies and clearly understand what is required of me as a candidate of Rutgers Formula Racing. I will do my best to follow all of the rules for the safety of myself and other team members. If I continuously break team policies, then team leadership (Directors, Captains or Buddies) have the right to terminate my membership with Rutgers Formula Racing.

#### Liability Release

I, \_\_\_\_\_ (Print Name), will be working in a machine shop or other facilities owned by Rutgers, The State University of New Jersey to fabricate, assemble, and test an experimental race car designed by the Rutgers Formula Racing Team, a student branch of the Society of Automotive Engineers (SAE), and therefore acknowledge the following:

- That participation is voluntary and at my own risk;
- That working with machinery such as lathe, mill, or any tool used in the fabrication of a race car is an inherently dangerous activity and I voluntarily assume the risks of bodily injury, property damage, and/or death, which may be incurred as a result of participating in such an activity;
- That I affirm, to the best of my knowledge that I am in good physical and mental health and free from cardiovascular, respiratory, and other diseases or ailments, which could impair my abilities while operating such machinery;
- That I agree to abide by all the rules and instructions provided to me to fabricate an experimental vehicle. I also agree to wear all the necessary safety gear when working with machinery;
- That I am ultimately responsible for my own safety and at any time can refuse to work with any machinery or tools, to include other items used in the shop such as chemical compounds, paints, resin, fiberglass, fuel, etc.
- That in the event that a need for emergency medical services arises, I authorize and consent to such service being provided and assume the cost thereof;
- That at all times I shall heed posted warnings and refrain from acting in a manner which may cause or contribute to the injury of myself or others;

Notwithstanding these risks, for and in consideration of my participation, I, for myself do waive, release and discharge Rutgers, The State University of New Jersey, its governors, trustees, officers, employees, and agents from any and all claims, demands, actions, causes of actions, costs, and expenses for and by reason of any personal injury, property damage, loss, and expense, which heretofore have been or hereafter may be sustained or suffered by me in consequence of and as a result of a certain accident, casualty, or event of my presence or activities in connection with fabricating an experimental racing vehicle. I also agree to indemnify and hold harmless Rutgers for injuries sustained either by me and/or caused by me to others during this activity. Furthermore, I acknowledge that the risks outlined above are not intended to be at all-inclusive and voluntarily accept all risks known or unknown.

\_\_\_\_\_  
Participant's Name (Print)

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Emergency Contact's Name

\_\_\_\_\_  
Contact's Phone Number