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|  | **TEXAS A&M UNIVERSITY**  **SOUNDING ROCKETRY TEAM** |
| FALL APPLICATION | 2021-2022 |

**APPLICATION INFORMATION**

**The following form is the application for team member positions on the 2021-2022 Texas A&M University Sounding Rocketry Team. Please visit our website at** [**tamusrt.org/apply**](http://tamusrt.org/apply) **or email our director, Dylan Mahoney, at** [**mahoney@tamu.edu**](mailto:mahoney@tamu.edu) **for more information.**

ELECTRONIC SUBMISSION

**Please fill out this form and save it as a PDF. Save both this completed application PDF and an updated resume PDF to a ZIP folder** titled as follows: LastName\_FirstName\_<First preference abbreviation>\_<Second preference abbreviation> (abbreviations in “Subteams” section on page 2).

Example: **Smith\_Joe\_PROP\_EP.zip**

The ZIP folder should be submitted using a Google Form; use this [link](https://forms.gle/abRrwqsoWns3tWp18) or visit our [website](http://www.tamusrt.org/apply).

**SUBMIT EARLY APPLICATIONS BEFORE AUGUST 25th AT 11:59 PM CDT.**

**SECOND DEADLINE IS AUGUST 30th, 2021 AT 11:59 PM CDT. LATE APPLICATIONS WILL NOT BE REVIEWED.**

Applicants who apply before the early deadline will be notified of interview selections no later than Saturday, August 28th; interviews will begin Monday, August 23rd and continue to Friday, September 3rd.

Spring applicants who apply before the second deadline will be notified of interview selections no later than Tuesday, August 31st; interviews will begin Wednesday, September 1st and continue to Friday, September 3rd.

The first general meeting for the 2021-2022 Sounding Rocketry Team will be Monday, September 6th at 7PM, location TBA.

**GENERAL INFORMATION**

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| Full Name: |  |  |  | Date: |  |
|  | Last | First | M.I. |  |  |

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| --- | --- | --- | --- |
| Phone: |  | Email: |  |

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| --- | --- | --- | --- | --- | --- |
| Major: |  | UIN: |  | GPA: |  |

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| Expected Graduation Date: ☐ May ☐ Dec  20 |  |  |

SUBTEAMS

Rank each subteam on a scale from 0-5, where 0 is a subteam would least prefer to be on, and 5 is a subteam you would most prefer to be on. Please read the Subteam Descriptions & Responsibilities (page 4) for detailed descriptions of each subteam before indicating your selections. You may rank some subteams the same, however, **please provide a variance in your rankings to assist SRT management during the interview selection process.**

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| **SUBTEAMS** | **ABBR.** | **RANKING (0-5)** |
| BUSINESS | BIZ |  |
| DYNAMICS | DYN |  |
| ELECTRONICS AND PAYLOAD | EP |  |
| PROPULSION | PROP |  |
| STRUCTURES | STR |  |
| TESTING AND OPERATIONS | TOPS |  |

COURSES

Please list the courses that you have taken or plan to take during the following semesters. If you are unsure, please make your best guess as to which courses you will be taking in the future.

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| **FALL 2020** | **SPRING 2021** | **FALL 2021** | **SPRING 2022** |
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SKILLS

Please rate your familiarity with the following **from 1 (unfamiliar) to 10 (technical expert)**. Note that the following programs are not requirements. If you are skilled in a program(s) not listed that you feel is valuable, please list and rank it under “Other.”

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| CAD (SOLIDWORKS, ETC.) |  | SOLDERING / WIRING |  | **OTHER**: | |
| CFD (STAR-CCM+, ETC.) |  | MACHINING |  |  |  |
| C / C++ / PYTHON |  | ACCOUNTING |  |  |  |
| MATLAB |  | GRAPHIC DESIGN |  |  |  |
| MICROSOFT EXCEL |  | WELDING |  |  |  |
| FEA (ABAQUS, ETC.) |  | COMPOSITES |  |  |  |

RESPONSES

Please answer the following questions to the best of your ability and as concisely as possible (300 characters max, each).

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| **Why are you interested in joining the Texas A&M University Sounding Rocketry Team and what do you hope to gain personally from this experience?** |
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| **What would you like to contribute to the Texas A&M University Sounding Rocketry Team, if selected?** |
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| **SRT is a serious time commitment and members are expected to spend up to 20 hours a week working on team projects. List & explain your other obligations during the coming fall and spring semesters.** |
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| **Explain your reasoning behind the preferences you selected for subteam specification.** |
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| **What are your aspirations after graduating? (graduate school, academia, industry, dream job, etc.) If you have any, list & explain your current commitments after graduating.** |
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| **List below any past/current membership/leadership involvement in any other organizations.** |
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HONOR CODE

**By signing the line below (physically or electronically), you are certifying that the information you have entered above is both truthful and accurate to the best of your knowledge. Also, if selected, you are agreeing to actively participate on the 2021-2022 Texas A&M University Sounding Rocketry Team for both semesters of the 2021-2022 academic school year.**

AGGIE CODE OF HONOR: “An Aggie does not lie, cheat, steal, or tolerate those who do.”

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| Applicant Signature: |  | Date: |  |

**SUBTEAM DESCRIPTIONS**

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| BUSINESS  Manager: Jenny Knapp ([jenny\_knapp@tamu.edu](mailto:jenny_knapp@tamu.edu)) | | 1 manager  3 members |
| **mission** |  | |
| To secure the financial future of the team, maintain a detailed accounting record, and publicize the team’s achievements, goals, and ideas to individuals inside and outside of the organization. | | |
| **systems** |  | |
| Sponsorship Procurement | Monthly Newsletter & Mailing List | |
| Team Balance Sheet & SOFC Accts. | Official Website & Social Media | |
| Team Branding, Logos, & Apparel |  | |
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| **tools & skills** |  | |
| Microsoft Excel w/VBA | Adobe Photoshop & Illustrator | |
| Web Design & HTML/CSS | Database Management | |
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| DYNAMICS  Manager: Sarah Kinney ([smkinney@tamu.edu](mailto:smkinney@tamu.edu)) | | 1 manager  4 members |
| **mission** |  | |
| To design the aerodynamic profile and trajectory of the team’s launch vehicle, through the modeling and analysis of aerodynamic properties, stability characteristics, and flight performance. | | |
| **systems** |  | |
| Flight Simulation | Nosecone, Tailcone, & Fin Design | |
| Wind-Tunnel Testing | Recovery Design & Range Safety | |
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| **tools & skills** |  | |
| MATLAB | C/C++, Python | |
| CFD (STAR-CCM+, Ansys FLUENT) | OpenRocket & RASAero | |

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| ELECTRONICS & PAYLOAD  Manager: Montana Barker ([montanabarker@tamu.edu](mailto:montanabarker@tamu.edu)) | | 1 manager  5 members |
| **mission** |  | |
| To design and manufacture a flight ready avionics system, capable of providing for the power, control, and data acquisition needs of all onboard sub-systems. Will maintain a ground communication network to ensure remote launch capabilities, as well as designing & manufacturing a payload of scientific merit. | | |
| **systems** |  | |
| Main Flight Computer(s) | Scientific Payload | |
| Engine Instrumentation & DAQ | GPS & Flight Telemetry | |
| Communication Network | Ground Control Systems | |
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| **tools & skills** |  | |
| PCB Design | C/C++ & Python | |
| Wiring & Soldering | RF Design & Analysis | |

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| PROPULSION  Manager: Eliot Nychka ([shadykats@tamu.edu](mailto:shadykats@tamu.edu)) | | 1 manager  5 members |
| **mission** |  | |
| To design and manufacture a hybrid engine system, validate engine test performance with physical modeling tools, and develop and implement methods for improving performance. | | |
| **systems** |  | |
| Combustion Chamber | Plumbing & Valve System | |
| Oxidizer Injection | Nozzle | |
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| **tools & skills** |  | |
| MATLAB | CAD (SolidWorks) | |
| Combustion Analysis & Modeling | CFD (STAR-CCM+, Ansys FLUENT) | |
| Manufacturing (Lathe, Mill, Etc.) | Fluid Piping & Instrumentation | |

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| STRUCTURES  Manager: Felix Kainz ([fkainz\_glen27@tamu.edu](mailto:fkainz_glen27@tamu.edu)) | | 1 manager  5 members |
| **mission** |  | |
| To design, analyze, fabricate, and test all structural components of the team’s vehicle and launch infrastructure. Members will be responsible for contributing towards and updating the team’s CAD assemblies. | | |
| **systems** |  | |
| Composite Airframe | Nosecone, Tailcone, & Fins | |
| Bulkheads & Fasteners | Launch Tower & Trailer | |
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| **tools & skills** |  | |
| CAD (SolidWorks) | Composite Design & Fabrication | |
| Manufacturing (Lathe, Mill, Etc.) | Structural Analysis & FEA | |

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| TESTING & OPERATIONS  Manager: Evelyn Wendt ([ewendt@tamu.edu](mailto:ewendt@tamu.edu)) | | 1 manager  5 members |
| **mission** |  | |
| To characterize the rocket’s critical subsystems through rigorous testing and analysis; this includes the hybrid engine assembly, oxidizer control system, and ground communication network. Will serve as the team’s primary ground controllers during launches. | | |
| **systems** |  | |
| Static Engine Test Cell | Engine DAQ & Control Systems | |
| Filling & Ignition Infrastructure | Launch Tower & Trailer | |
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| **tools & skills** |  | |
| CAD (SolidWorks) | LabView & NI MAX | |
| Signal Processing | Fluid Control & Ignition | |
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