



**2021-2023 Constitution**  
**Michigan Aeronautical Science Association**

**Preamble:**

We, the members of the Michigan Aeronautical Science Association, in order to provide the University of Michigan community with a club that allows members to explore high-powered liquid-bipropellant rocketry, do hereby establish this constitution.

**Article I: Name**

The name of the organization will be the Michigan Aeronautical Science Association, henceforth referred to as MASA.

**Article II: Affiliations with other groups**

MASA is affiliated with the College of Engineering, its sponsoring department. MASA also maintains a close relationship with the Aerospace Engineering Department.

MASA will cultivate relationships with and seek sponsorships from industry partners to help fund the projects undertaken by the organization. These sponsorships include donations and gifts-in-kind from various engineering departments and offices within the University of Michigan and companies, and provide funding, materials, or engineering expertise to the team.

**Article II: Purpose, vision, mission, aims, and functions of the organization.**

*Section 1 - Purpose:* MASA was founded to educate students about the basics of rocketry while providing them with hands-on exposure to the design, build, and test phases of engineering, and to research and experiment with growing areas of rocketry such as hybrid and liquid propulsion.

*Section 2 - Mission:* MASA's mission is to push the boundaries of student rocketry with ambitious projects that seek to spark a passion for aerospace engineering within its members, as well as throughout the broader community, through outreach projects.

MASA understands and is committed to fulfilling its responsibilities of abiding by the University of Michigan policies and procedures.

**Article IV: Membership**

*Section 1 - Active Membership:* Active membership shall be mostly limited to persons officially connected with the University of Michigan as faculty, staff, registered students, or recent graduates who want to continue the project the following summer/semester after graduation. On occasion, MASA may admit uniquely motivated students from local high schools or other local universities, such as Washtenaw Community College (WCC), at the discretion of the team leads. MASA will comply with all applicable federal and state laws regarding nondiscrimination and affirmative action in addition to those in place by the University of Michigan.

*Section 2 - Joining MASA:* To become a member, an individual must indicate interest by providing their email and being added to a MASA email list or attending one MASA meeting. To be considered active, the individual must become involved in one or more MASA subteams and contribute to a project, as determined by the subteam lead.

*Section 3 - Member Withdrawal:* A member may voluntarily withdraw from the organization by notifying the Executive Board of their desire to discontinue membership.

*Section 4 - Non-discrimination:* MASA is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight, or veteran status in its membership or activities.

*Section 5 - Non-disruption:* Upon joining the organization, all members agree not to undermine the purpose or mission of MASA.

## **Article V: Officers**

MASA will be governed by an Executive Board consisting of thirteen Executive, Administrative, and Technical Officers.

### *Section 1: Executive Officers*

1. *MASA shall elect a President.* The President shall be the liaison for the department, team leads, and general members of MASA. They will inform members of general announcements, chair all Executive Board meetings, and hold other leads accountable for their roles. The President oversees the functions of the entire organization and has the executive power to make decisions and overturn those that the other leads may make. The President should use the other leads for counsel, and their opinions must be taken into account on large decisions.
2. *MASA shall elect a Vice President.* The Vice President shall assist the President in ways they see fit, shall assist new members with integration into MASA, and shall coordinate outreach and DEI initiatives. The Vice President oversees the functions of all administrative leads, and must hold them accountable.
3. *MASA shall elect a Chief Engineer.* The Chief Engineer shall be responsible for the overall design of the rocket. They shall assist all technical leads, provide assessment of feasibility of the rocket, and act as an arbiter between subteams to solve problems and issues. The Chief Engineer oversees the functions of all technical leads, and must hold them accountable.

### *Section 2: Administrative Officers*

1. *MASA shall elect a Safety Officer.* The Safety Officer shall be the liaison for the University in all matters regarding health and safety of all things MASA. They will hold MASA accountable for all safety procedures (SOPs) and reserve the ability to call off any launches, tests, or other events if they deem them unsafe or excessively risky.
2. *MASA shall elect a Treasurer.* The Treasurer shall provide reimbursements from the MASA SOAS account, be the point of contact of the MASA SOAS account and maintain and help create a MASA budget. The Treasurer shall also assist with supply-chain management and procurement.

3. *MASA shall elect a Business Lead.* The Business Lead shall be the point of contact for all sponsors, and work to find and maintain all sponsorships. They will also maintain the MASA website, create a newsletter, maintain a social media presence, create team videos and media, create and sell team merchandise, and manage the team's public relations. They will also lead and manage the MASA Business subteam.
4. *MASA shall elect a Social Lead.* The Social Lead shall be in charge of coordinating social events for team members.

### *Section 3: Technical Officers and Subteam Leads*

1. *MASA shall elect an Aerodynamics & Recovery Lead.* The Aerodynamics & Recovery lead shall be in charge of the Aerodynamics & Recovery subteam and be responsible for the analysis and delivery of all vehicle aerodynamic surfaces and recovery systems, as well as overall vehicle flight dynamics and simulation.
2. *MASA shall elect an Assembly, Test, & Launch Operations (ATLO) Lead.* The ATLO lead shall be in charge of the ATLO subteam and be responsible for the analysis and delivery of all fluids subsystems on the vehicle, all ground support equipment (GSE), the maintenance and infrastructure development at MASA test facilities, and the planning and operation of major test campaigns such as engine hotfires. The ATLO lead is also responsible for talking with launch sites and organizing the logistics of launches and competition.
3. *MASA shall elect an Avionics Lead.* The Avionics lead shall oversee the Avionics subteam and be responsible for the analysis and delivery of all avionics vehicle subsystems along with GSE software and data collection systems. This includes electronics used on the ground (testing/instrumentation or ignition), and electronics that go in the rocket (recovery electronics, telemetry).
4. *MASA shall elect a Propulsion Lead.* The Propulsion lead shall oversee the Propulsion subteam and be responsible for the analysis and delivery of the vehicle propulsion system and Main Propellant Valves, as well as the planning and execution of hotfire tests, along with the ATLO lead.
5. *MASA shall elect a Structures Lead.* The Structures lead shall oversee the Structures subteam and be responsible for the analysis and delivery of all major vehicle structures including propellant tanks, the vehicle airframe, and all mounting hardware on the rocket
6. *MASA shall elect a Production Manager.* The Production Manager shall work with the Wilson Student Team Project Center to organize the machining and construction of the rocket. They shall also coordinate the MASA supply chain and coordinate with MASA's Out of House manufacturing partners.

*Section 4 - Officer Withdrawal:* An officer may voluntarily withdraw from the organization or step down from their leadership position by notifying the rest of the Executive Board of their desire to do so. In the instance that an officer leaves mid-year for whatever reason (e.g. internship), the outgoing officer may nominate a replacement that must be approved by a simple majority vote of leads. Should the nominated member refuse the leadership position, or should they not be approved by leads, other candidates may be nominated by any officer.

## **Article VI: Faculty Advisor**

MASA's faculty advisor is Professor Mirko Gamba of the Aerospace Department. The role and duties of the faculty/staff advisor shall include attending meetings as deemed necessary by the President, providing counsel to the Executive Board, and advising the organization on policies, decision making, and leadership development. The advisor will review and approve testing procedures and procedures for similar activities, and will provide advice on complying with export control regulations. They shall not vote on official organization business, and shall not be an authorized signer.

## **Article VII: Elections**

*Section 1 - Election Timeline:* MASA will hold yearly elections to elect new officers each year. The process will be held during the last two months of the school year, with newly-elected officers formally succeeding outgoing leads at the end of the school year.

*Section 2 - Eligibility to Vote:* Those members meeting all requirements of active membership set forth in Article IV, Section 1 will be granted voting privileges.

*Section 3 - Eligibility to Run:* Those members meeting all requirements of active membership set forth in Article IV, Section 1 and officially connected with the University of Michigan as faculty, staff, or as a registered student are eligible to run in a MASA election. Only active members of a subteam are eligible to run to be lead of that subteam, except in extraordinary circumstances. Any member, regardless of subteam affiliation, can run for an Executive Officer position or for the positions of Safety Officer, Treasurer, Production Manager, and Social Lead.

*Section 4 - Election Process:* The election process will be conducted as described below:

1. A general meeting will be called to announce the beginning of the annual election process. Members will arrive at the meeting and the President or Vice President will record the usernames of those present.
2. A formal introduction to the process will be given by the President or Vice President, along with the position and duties of each officer.
3. All members eligible and willing to apply for a leadership position will be given a reasonable amount of time to submit application forms to up to three positions.
4. A discussion and question and answer session open to all members will be held during a general meeting and technical sub-teams to introduce and evaluate each candidate. Any candidate unable to attend will be given reasonable accommodations.
5. Two current Officers not running for reelection (usually the President and Vice President) will send all general members a link to a Google form that will be used for voting. This form will be kept in a folder that only the two Officers will have access to. They will be responsible for legitimizing, tallying, and announcing the winners. The winners will be announced by the President after all voting has finished.
6. The polling system will use a ranking system such that the winner will be determined using the instant run-off system. Any further ties will be decided by the President or their delegate, if the President is running for reelection.
7. If a simple majority of Officers do not think a winner is qualified for their position, the position may be awarded to the 2nd place candidate, provided they are also qualified.

All technical sub-team leads will be elected at their respective technical sub-team meeting, using the same process outlined above. All voting will be kept secret, although a unique or UM friend account will be required to submit a ballot and verify the legitimacy of the member. In the case of reasonable suspicion of election rigging and fraud, the votes will be shown to prove legitimacy of election.

#### **Article VIII: Operations and Meetings**

All officer meetings will occur on a basis at a time selected by the executive committee and will follow the procedure set forth below:

1. Report by the President
2. Updates from the Chief Engineer
3. Technical reports by Technical Officers
4. Administrative updates
5. Dismissal by the President

#### **Article IX: Finances**

MASA will finance the activities it engages in by the following means:

- Funding from the College of Engineering Office of Student Affairs
- Funding from the Aerospace Engineering Department
- Funding from various other Engineering Departments, such as the ECE department or Space Institute
- Funding from various other University units such as the Office of the President or Office of the Provost
- Funding from student governments, such as the Engineering Student Government and Central Student Government
- Funding from the NASA Michigan Space Grant Consortium
- Funding from corporate partners and sponsors such as Boeing, Blue Origin, or LIFT
- Funding from donations by members of the public or team members

In the event that MASA ceases to exist as an organization, any remaining funds should be donated to SEDS@UM.

#### **Article X: Removal of General Members or Officers**

*Section 1 - Removal of General Members:* Any member of MASA in violation of MASA's purpose, constitution, or who fails to meet the membership requirements as outlined in Article IV, may have their privileges as a member revoked through the following process:

1. A written request by at least three members of the organization must be sent to the Executive Board.
2. Written notification to the member in question, asking the member to be present at the next Executive Board meeting and prepared to speak.
3. A unanimous decision by the Executive Board as to the removal of the general member.

*Section 2 - Removal of Officers:* Any Officer of MASA in violation of MASA's purpose, constitution, or who fails to fulfill their responsibilities as outlined in Article V, may be removed from office by the following process:

1. A written request for the Officer's removal by at least three members of MASA, clearly communicating concerns about the member to the MASA Executive Board.
2. Written notification to the Officer of the request, asking the Officer to be present at the next meeting and prepared to speak.
3. A two-thirds (2/3) majority vote by the Executive Board as to the removal of the Officer.

**Article XI: Amendments and Ratification**

This constitution is binding to all members of MASA but it is not binding unto itself. Amendments to the constitution may be proposed in writing by any member of MASA to the Executive Board. The amendments will be placed on the agenda for the next Executive Board meeting and voted on by the Executive Board at that time. Accommodations will be made for members who are unable to attend the meeting. Proposed amendments will become immediately effective following approval of two-thirds (2/3) vote by the Executive Board.

This constitution must be ratified by two-thirds of the Executive Board to take effect and shall be reviewed every 2 years.

**Article XII: Statement of Compliance**

MASA has read and agrees to fully comply with the University's policies. We understand that the organization's registration is contingent upon acceptance of these policies.