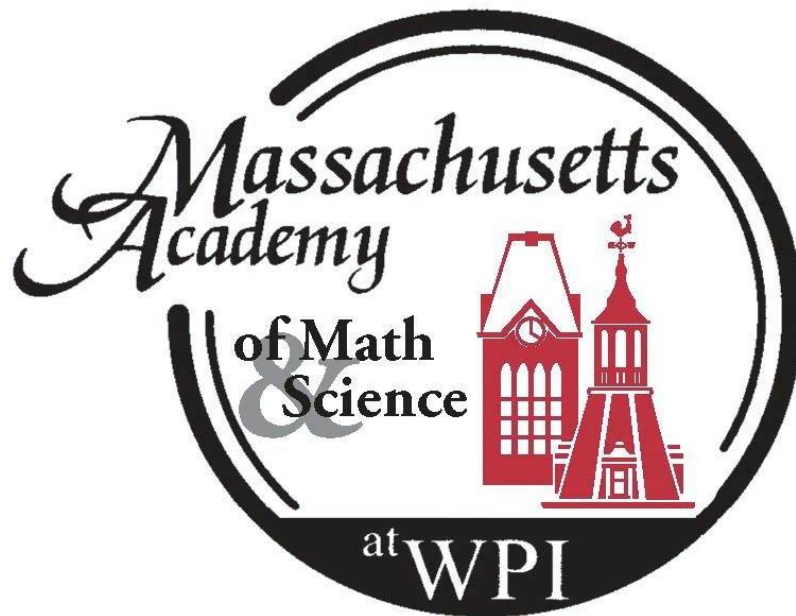


*MASSACHUSETTS ACADEMY OF  
MATH AND SCIENCE*



*SENIOR INDEPENDENT STUDY  
PROJECT*

*2023 - 2024*

## Senior Independent Study Project Description

The Senior Independent Study Project (SISP) is a 100-hour project which provides an opportunity to acquire knowledge that is new to the student outside of the traditional classroom-based curriculum. The SISP also helps students improve their habits as life-long learners. Overall, the SISP supports Mass Academy students in the further development of their critical thinking and problem solving skills in an independent learning situation.

Students may choose one of five pathways to meet the requirements of their SISP:

1. Investigating a new area of special interest. Under the supervision of a Mass Academy faculty advisor and with the assistance of a qualified mentor, students can explore and experience new learning. Successful projects of this type have included art, dance, music, and writing projects, as well as physical training, new language acquisition, theatre directing, and EMT training. The project must have demonstrable goals and learning outcomes, must prove new learning, and must be challenging in nature. Proposals for such SISPs require students to identify and consult with a qualified mentor, enroll in a class, or take lessons.
2. Participating in unpaid research. This can involve new research, an extension of a student's research project, or an internship in a laboratory. The expected outcome after the 100 hours would be one or more of the following: publication of research in a professional journal; research being entered into a competition; a public presentation that includes a review or judging.
3. Planning and executing a service learning project. Service learning is more project-based and involves study and design phases, an implementation phase, and an evaluation phase. Service learning usually begins by studying a community need to identify a worthwhile project. The goal of service learning is to understand the social problem that creates the situation and how to successfully implement a solution through direct volunteerism. One example could be creating a traveling science show program (including the designing of lessons) and bringing it to local middle and elementary schools. This SISP may be a team project.
4. Completing a student-led civics project. A student-led civics project should be non-partisan in nature and have a goal of fostering long-term change through influencing public opinion on an issue and/or influencing a policy goal. This is often achieved by engaging with decision-makers. A student who completes a civics project may be inspired by local or global issues and seek ways to impact change around the identified issue. Students who complete a civics project will be expected to complete the six stages of action civics: examine self and civic identity, identify an issue, research and investigate, develop an action plan, take action, and reflect and showcase. This SISP may be a team project.
5. Completing a global action and awareness project. This type of project should aim to cultivate one's global citizenship such as focusing on one of the United Nations' 17 Sustainable Development Goals (SDGs). According to the UN, "The Sustainable Development Goals are a call for action by all countries – poor, rich and middle-income – to promote prosperity while

protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection.” Such projects can take many forms, incorporating a student’s interest in research, the arts, history, social justice, or some other area. Students may engage in an inquiry-based project where they conduct their own research, develop a program for a local school or community organization, or join and contribute to an established global initiative. See the appendix for resources. This SISP may be a team project.

If the SISP involves significant physical activity, then up to 28 supervised hours of the SISP can count toward fulfilling the physical education requirement for Mass Academy.

If a WPI course taken by the student aligns with their SISP, then the course could be approved as partially contributing toward the student’s SISP hours, up to a maximum of 28 hours.

For SISP service learning projects, hours above the 100-hour SISP requirement may be applied toward the community service requirement for senior year.

Each student must present the results of their learning to the Mass Academy community during April of senior year. The SISP is a required and graded course at Mass Academy, and is recorded on students’ transcripts.

## Timelines and Deliverables

The following checkpoints and products are designed to aid students in developing, undertaking, and completing their SISPs.

1. By the end of junior year, each student must submit a one-page, printed narrative SISP Proposal to their faculty advisor. The student's advisor will review the proposal, discuss it with other faculty for their feedback, request revisions (if necessary), and - upon receipt of any acceptable modifications - approve the project. See the appendix for a sample proposal.
2. Prior to commencing work on the project and **no later than the second senior advisory meeting of senior year**, each student must submit a timeline for their SISP to their faculty advisor. This will be used to determine the feasibility of completing the project. A suggested format for the timeline is provided in the appendix of this handbook.
3. During the project, each student must complete and submit two checkpoint forms (located on the Student Resources page of the Mass Academy website). The first checkpoint should be scheduled after approximately 33 hours, and the second after approximately 66 hours. The 100-hour checkpoint is conducted as a final presentation instead of a checkpoint form. More details about the checkpoint meetings is provided in a later section of this handbook.
4. Before the first checkpoint, each student must submit an Assistance Agreement (Mentor) Form which will show that the student has secured the help of one or more qualified mentors. Students who are struggling to find a mentor should discuss this with their faculty advisor. The Assistance Agreement (Mentor) Form is included in the appendix.
5. On SISP Presentation Day in April, all seniors will present their projects to Mass Academy juniors and faculty.
6. By the SISP Presentation Day in April, each senior must submit their SISP Final Presentation and supporting documentation (including log of hours and journal entries of work accomplished) to their faculty advisor.

## **Requirements for Successful Completion of a SISP**

- An approved project proposal \*
- A timeline for the work to be accomplished throughout the year \*
- A signed Assistance Agreement (Mentor) Form \*
- Two completed checkpoint forms \*
- A project presentation including reflection
- Appropriate project documentation and log of hours \*

\* These documents must be submitted to your faculty advisor by the required dates.

## Guidelines for SISP Proposals

A Senior Project Proposal addresses the following questions:

- Area of Focus: What is your special interest?
- Intent: What is the new knowledge, attitude, and/or skill that you expect to gain from the project? Why will these make it an interesting and worthwhile project for you to undertake?
- Prior Knowledge: What knowledge, habit of mind, skill, and need do you bring to this project?
- Methods of Inquiry: How will you investigate your special interest and make good on your intent? Who will you ask to help you through advice, observation, and/or apprenticeship? What specific resources will be needed? What challenges do you expect?
- Evidence of Learning: What will be your evidence of success or change? You will be graded on the quality of the final product, your ability to clearly demonstrate your acquisition of new knowledge, and your depth of understanding of this new knowledge. Your faculty advisor will determine the project grade after the final deadline.

Refer to the appendix for a sample SISP proposal.

## Assistance / Mentor Procedure

One of the requirements of your SISP is to obtain assistance from a qualified person in your area of interest. The forms found in the appendix are for your use when you make the initial contact with a potential mentor.

When you request assistance from a mentor, bring the following:

- A letter of introduction
- Your project proposal, and
- An Assistance Agreement Form

Ask the person to read the letter of introduction and your proposal and then ask them to sign a copy of the Assistance Agreement Form.

You will need to follow this procedure for each person who assists you in a significant way, so make several copies of the Assistance Agreement Form. It is your responsibility to give a copy of each signed form to your faculty advisor and keep a copy in your own files.

## Goal Setting / Planning Your SISP

Successful completion of your independent project requires preparation. This begins with setting clear and measurable goals. To help with this step, follow the SMART guidelines below. After you have established your goals, be sure you have a clear plan, track your progress, talk to your faculty advisor and mentor regularly, ask for help if you get stuck, and avoid procrastinating by making steady progress throughout your SISP.

### SMART Goal-Setting

**S** = Specific. When setting a goal, be specific about what you want to accomplish.

**M** = Measurable. What metrics are you going to use to determine if you meet the goal? This makes a goal more tangible because it provides a way to measure progress. For a project that will take a few months to complete, set some shorter-term milestones by considering specific tasks to accomplish.

**A** = Achievable. This focuses on how important a goal is to you and what you can do to make it attainable. It may require developing new skills and changing attitudes, so focus on inspiration and motivation. Think about how to accomplish the goal and whether you have the tools/skills needed. If you don't currently possess those tools/skills, consider what it would take to attain them.

**R** = Relevant. Relevance refers to focusing on something that makes sense within a broader context. Ask yourself how this goal is meaningful and relevant to you, and whether you consider the intended outcome to be important.

**T** = Time-bound. Anyone can set goals, but if they lack realistic timing, chances are you're not going to succeed. Providing a target date for deliverables is imperative. Ask specific questions about the goal deadline and what can be accomplished within that time period. If the goal will take three months to complete, it's useful to define what should be achieved half-way through the process. Providing time constraints also creates a sense of urgency.

Acquiring and cultivating new knowledge requires an on-going process of revision and re-evaluation. You must continually go back to previous steps to incorporate new information and results.

Your final presentation will examine the entire scope of your project, including a reflection. Keep in mind the following questions for this learning experience:

- What have you discovered about your ability to plan?
- How have you learned to use resources and solve problems?
- How do you intend to use the knowledge and skills you have gained?
- What have you discovered about your own thinking?
- Would you recommend this to someone else?
- How did you grow throughout this process?

Be sure to gather evidence throughout the duration of the project (pictures, videos, recordings, artifacts) to enhance your final presentation.

## Checkpoint Meetings

Students are expected to complete two checkpoints. These checkpoints should occur after approximately 33 hours and 66 hours of learning. Checkpoint meetings should be held with a faculty member other than the student's advisor. All efforts should be made to meet with a different faculty member for each of the check-ins. The faculty advisor may also attend the checkpoint meetings.

Prior to the checkpoint meeting, the student should complete the top portion of the SISP Checkpoint Form (see appendix). Students are also encouraged to prepare a brief presentation which includes the following:

- An explanation of the project and why it was selected
- Progress made so far, including evidence of work (e.g. demonstration, video, photos, work samples)
- Challenges faced so far and how they were managed
- Next steps

Students should also provide evidence of the hours completed, typically in the form of a log.



## Presentation Expectations

Your final presentation is an opportunity for you to reflect on the work you have accomplished during your SISP. It should include a slide show with a minimum of 5 slides, including pictures and /or videos, and respond to the following prompts:

- A summary of what you did and why you did it.
- A description of what you learned. Did you learn as much, more, or less than you planned? Why?
- Any obstacles you faced during your project and how you overcame them.
- How well you did with time management.
- Whether you will continue with this project in some way.
- How you will use the knowledge and experience that you have acquired.
- A reflection of what you learned through your SISP experience.

Additional expectations regarding the delivery of your presentation include:

- The speaker utilized effective mechanics of presentation through vocal variety, emphasis of key points, clarity of speech, humor, eye contact, pace, and rhythm.
- The speaker demonstrated mastery of content of their material/subject.
- The speaker answered questions from the audience in an informed and confident manner.
- The speaker's supporting materials enhanced the project/presentation and were effectively referenced and utilized.
- The speaker's supporting materials meet high standards of excellence (craftsmanship, design, and creativity).
- The speaker utilized their time effectively.
- The speaker displayed an appropriate tone and professional style of dress.

## **SISP Grade**

You will be graded on the quality of the final product, your ability to clearly demonstrate your acquisition of new knowledge, and your depth of understanding of this new knowledge. Your faculty advisor will determine the project grade after the final deadline date, which is the Presentation Day in April.

The SISP project is graded as “P” or “NR” and is recorded on your final transcript. Successful completion of the SISP is a graduation requirement for Mass Academy.

## Appendix

### Sample Student SISP Proposal

Focus: Firefighting

Intent: Intent is to become a volunteer firefighter. Firefighting is not only about putting out fires. The training involved in becoming a firefighter includes emergency medical training, open water rescue, automotive accident response, and fire prevention. The fire department provides the opportunity for positive interaction with the community. The company visits schools in the local towns and offers workshops for citizens.

Prior Knowledge: My years in Boy Scouts have given me some background skills in basic first aid, CPR, and knot tying. I have also held leadership positions and learned teamwork, both of which are essential in firefighting.

Methods of Inquiry: I already know a fair amount about being a volunteer firefighter, since my father was a volunteer firefighter for many years. I have already visited my town's fire department website and have scheduled an appointment with our fire chief to gather more information.

Evidence of Learning: All recruit firefighters are required to attend the Massachusetts Fire District 7 Recruit Training program, in which I will enroll. The program consists of all aspects of basic firefighting. It culminates with Massachusetts Fire Training Council Firefighter I/II certification. The remaining portion of the year will be attending training sessions with the local department and answering calls.

## SISP Timeline

Student Name: \_\_\_\_\_ Faculty Advisor: \_\_\_\_\_

SISP Project: \_\_\_\_\_

Timeframe	Actions/Goals	<b>Checkpoints</b> <i>Indicate the anticipated month for each checkpoint</i>
June, July, and August		
September and October		
November		
December		
January		
February		
March		
April		**SISP Presentation



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FAX: (508) 831-5880

## Letter of Introduction

### Senior Independent Study Project

The purpose of the SISP (Senior Independent Study Project) is to provide opportunities for Mass Academy students to learn from experiences that usually do not take place within the traditional school curriculum. To do this, students choose topics or activities that greatly interest them, develop a proposal with help from a Mass Academy teacher, and then develop a plan to achieve their stated goals and objectives over the course of the school year. As part of their learning, students must seek advice and help from individuals who are knowledgeable and experienced in the chosen area of interest. The final result—whether written, built, demonstrated, or performed—showcases the new knowledge and skills the students have gained and how it was acquired. Regardless of content, it is expected that the student's SISP experience will enhance life-long learning skills. Successful completion of the SISP is required for graduation.

Past projects have included artistic creations, internships, EMT training, preparation for the Boston marathon, computer animation, publishing a book, acquiring a new language, and ballroom dance. Mentors like you have made key contributions by offering advice; assisting with networking; helping secure space in labs, studios, or workshops; demonstrating techniques and skills; and giving valuable feedback on written summaries or performances. Many mentors have noted that they have enjoyed participating in these projects as much as the students. To help you decide if you are willing and able to become a mentor for this project, a copy of the student's proposal will be provided for your review. If you would like further information about the SISP project or Mass Academy in general, please do not hesitate to call me at 508-831-5859.

I appreciate your willingness to discuss this project with our student and hope that you may be able to help. We appreciate the supportive community that enables our students to thrive in all of their endeavors.

Sincerely,

A handwritten signature in cursive script that reads "Anne Ludes".

Anne Ludes  
Director  
Mass Academy of Math and Science

## Assistance Agreement / Mentor Form

I have read the Letter of Introduction and the Project Proposal, and I agree to mentor

\_\_\_\_\_ with their Senior Independent Study Project.  
student's name

\_\_\_\_\_  
signature

\_\_\_\_\_  
printed name

\_\_\_\_\_  
phone number/email

\_\_\_\_\_  
date

## SISP Log (Sample Template)

Student Name: \_\_\_\_\_ Faculty Advisor: \_\_\_\_\_

SISP Project: \_\_\_\_\_

<b>Date</b>	<b>Times</b>	<b>Activity</b>	<b>Number of Hours</b>
<i>Ex.</i> 7/15/22	<i>Ex.</i> 5:00 – 6:30 pm	<i>Ex. Met with mentor to review project ideas, brainstorm timeline, plan action steps, and identify resources needed</i>	<i>Ex.</i> 1.5 hours

## Additional SISP Resources

### Civics Action Project

<https://www.doe.mass.edu/instruction/hss/civics/default.html>

<https://www.macivicsforall.org/free-civics-project-training-curriculum-resources-1>

<https://www.doe.mass.edu/frameworks/hss/civics-guidance.docx>

### Global Action/United Nations

<https://sdgs.un.org/goals>

<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

<https://www.un.org/sustainabledevelopment/be-the-change/>

<https://www.un.org/sustainabledevelopment/student-resources/>

<http://www.teachsdgs.org/resources.html>

<https://www.goalsproject.org/>

<https://worldslargestlesson.globalgoals.org/>