

## SVGS Capstone Project

The Capstone Project is a long-term project embedded in a specific aspect of the SVGS curriculum whose intent is to encourage students to reach beyond their academic work, extending and enhancing the traditional school experience outside of the classroom. The purpose of the Capstone Project is to provide students a unique opportunity to apply and develop academic and professional skills and interests in designing and implementing an authentic learning experience.

### General project requirements/criteria

- ✦ Includes definitive and substantive curricular component
- ✦ Relates to student's professional/career interests
- ✦ Incorporates student's interests and skills and promotes development of new ones
- ✦ Is based on specific project goals
- ✦ Defines target community/audience/population
- ✦ Requires approval by advisor and director
- ✦ Includes specific elements
  - △ Proposal and defense
  - △ Product exhibiting original work; review required (Reviewers and frequency vary with project type)
  - △ Records of progress and accountability (progress reports; portfolio)
  - △ Final presentation
  - △ Specific, detailed, quantitative and qualitative project evaluation based on project goals
  - △ Self-evaluation/reflection

### General student objectives

In completing the Capstone Project, students will accomplish the following:

- ✦ Complete and inventory of interests, skills, abilities, accomplishments, career goals
- ✦ Incorporate academic interests and skills in developing project idea
- ✦ Develop SMART project goals and a realistic project timeline.
- ✦ Create/defend a project proposal
- ✦ Execute the project plan
- ✦ Create an original product that satisfies project goals
- ✦ Complete specific, detailed quantitative and qualitative project evaluation
- ✦ Deliver a formal presentation upon completion of project
- ✦ Complete self-evaluation/reflection on project experience

As a result of completing the Capstone Project, students will develop the following skills:

- ✦ Organizing and managing a long-term project
- ✦ Complex problem-solving
- ✦ Finding resources
- ✦ Evaluation and synthesis of research
- ✦ Communication
- ✦ Collaboration
- ✦ Time-management
- ✦ Use of technology
- ✦ Oral presentation skills

## Specific project options

### Service learning

#### *Description*

A service-learning project integrates meaningful community service with instruction and reflection to enrich the learning experience, encourage civic responsibility, and strengthen communities. Students choosing this option will apply interests and skills based in the SVGS curriculum to meet identified needs in the school or larger community.

#### *Requirements/criteria*

- ✦ Includes definite and substantive curricular component
- ✦ Relates to student's professional/career interests
- ✦ Is based on detailed assessment of beneficiary's needs
- ✦ Details specific goals based on needs assessment
- ✦ Involves repeated and sustained interactions with beneficiary; is not just one-time event
- ✦ May include fund-raising component, but fundraising may not be the main focus of the project
- ✦ Includes specific elements
  - ▲ Formal proposal and defense
  - ▲ Specific product whose creation is justified by needs assessment; advisor reviews product and provides feedback before product is deployed or implemented
  - ▲ Records of progress and accountability—progress reports and portfolio
  - ▲ Final presentation
  - ▲ Specific, detailed, quantitative and qualitative project evaluation based on project goals
  - ▲ Self-evaluation/reflection

#### *Student objectives*

In completing this project, a student will

- ✦ Complete an inventory of interests, skills, accomplishments, and career goals.
- ✦ Select a potential beneficiary related to these interests, skills, accomplishments, and career goals.
- ✦ Understand the importance of a needs assessment and how to conduct a thorough needs assessment.
- ✦ Conduct an assessment of the needs of the proposed beneficiary.
- ✦ Develop SMART project goals based on the needs assessment.
- ✦ Develop a realistic and detailed project timeline.
- ✦ Create and defend a formal project proposal.
- ✦ Execute the project plan.
- ✦ Nurture a relationship with the beneficiary based on sustained interaction.
- ✦ Create a unique product that satisfies an identified need.
- ✦ Complete a specific, detailed, quantitative, and qualitative evaluation based on project goals.
- ✦ Complete a self-evaluation and reflection on project experience.
- ✦ Deliver a formal presentation upon completion of the project.

#### *Examples*

- ✦ A student really enjoyed calculus and computer science and is considering a college major in one or both subject areas. She decides for a senior project to create a series of Java applets to help students prepare for the AP Calculus exam.

- ✦ A student is interested in electrical or mechanical engineering. He decides to create a middle-school outreach module to teach students about building and analyzing circuits and he assists in delivering the module throughout the year.
- ✦ A student is interested in becoming a computer engineer, specializing in network security. He decides to research the security issues at SVGS and implement best practices for our computer network.
- ✦ A student is interested in systems engineering. She decides to create a computerized scheduling program to automatically assign teachers and rooms for exam periods at SVGS based on specified criteria.
- ✦ A student interested in pediatrics has a mentorship at a local pediatrician's office through her home school. She develops a program to ease children's anxiety as they wait to see the doctor by reading stories and books to them as they wait. She conducts a new and gently used children's book drive at SVGS and her home school in order to be able to give the children the book that she reads to them. She surveys parents of the patients to determine if the reading helped their child feel calmer before seeing the doctor.

## **Internship/Mentorship**

### *Description*

An internship/mentorship provides a broad overview of an industry and/or organization and valuable on-the-job experience for students who are considering specific career options. This educational experience should enhance the student's understanding of professional expectations and assist the student's socialization into a disciplinary culture. The internship/mentorship should be designed to incorporate a student's interests and skills and to represent an extension of the curriculum at SVGS. Students choosing this option must complete an independent project or create an original product in the context of their work in a professional setting.

### *Requirements/criteria*

- ✦ Includes a definitive and substantive curricular component
- ✦ Provide a broad overview of an industry and/or organization that relates to the student's interests and skills, but also allows the student to develop new skills.
- ✦ Provides student with hands-on experience in a professional field and enhances the student's awareness of career opportunities
- ✦ Is based on specific project goals
- ✦ Requires approval of mentor by advisor and director
- ✦ Includes at least 45 hours devoted to direct experience on-the-job and product creation
- ✦ Does not consist of shadowing or the student's mentorship experience through his/her home high school
- ✦ Includes specific elements
  - △ Formal proposal and defense
  - △ Specific product/project whose creation is based on project goals and which is delivered in the context of internship/mentorship activities; advisor reviews product and provides feedback before product is deployed or implemented
  - △ Records of progress and accountability— progress reports and portfolio
  - △ Final presentation
  - △ Specific, detailed, quantitative and qualitative project evaluation based on project goals
  - △ Self-evaluation/reflection

### *Student objectives*

In completing this project, a student will

- ✦ Complete an inventory of interests, skills, accomplishments, and career goals.
- ✦ Choose a type of internship/mentorship that relates to academic skills and interests and career goals.
- ✦ Work with project advisor to seek out and establish contacts with professionals in community who could/would be willing to provide internship/mentorship opportunities.
- ✦ Establish and maintain relationship with selected professional; develop a formal agreement regarding scope and nature of internship/mentorship activities.
- ✦ Develop specific goals for internship/mentorship based on mutual agreement between student and professional regarding scope and nature of internship/mentorship activities.
- ✦ Develop a realistic and detailed project timeline.
- ✦ Develop original product/project that can be used/executed as part of mentorship activities.
- ✦ Complete a specific, detailed, quantitative, and qualitative evaluation based on project goals.
- ✦ Complete a self-evaluation and reflection on project experience.
- ✦ Deliver a formal presentation upon completion of the project.

### *Example:*

A student with interests and skills in physics, chemistry, environmental science, and computer science participates in an internship at Solara, a local solar panel company. In learning how to install solar panels, the student develops a broad view of the renewable energy industry and developing technologies. Because Solara is a small company, the student is exposed to various aspects of the company from installing panels to understanding how a small business operates. In the course of the mentorship work, the student develops an informational package/ presentation to be delivered to community groups to help citizens understand the recent developments in solar technology that have made it more affordable and dependable.

## **Independent study**

### *Description*

Independent study is advanced work in an SVGS academic area under the supervision of an advisor where extended research or creative projects produce substantial and significant original work. In choosing this type of project, students engage in independent research or study in an area of professional interest culminating in scientific, creative, or analytical projects. These special projects would extend well beyond classroom instruction.

### *Requirements/criteria*

- ✦ Includes definitive and substantive curricular component
- ✦ Enables the student to apply and extend his/her academic interests and skills.
- ✦ Extends regular coursework; may not duplicate work submitted for grade/course credit or used to provide support for course projects unless there is a significant extension of the original work.
- ✦ Is based on specific project goals.
- ✦ Provides rigorous academic experience equivalent to that of any project.
- ✦ Includes regular meetings with advisor and submission of drafts and revisions as instructed.
- ✦ Includes specific elements:
  - △ Formal proposal and defense
  - △ Specific product whose creation is based on project goals and which represents student's advanced study; advisor reviews product and provides feedback before product is complete

- ⤴ Records of progress and accountability—progress reports and portfolio
- ⤴ Final presentation which includes selections or highlights of his/her work and articulates value of his/her project to the community.
- ⤴ Specific, detailed, quantitative and qualitative project evaluation based on project goals
- ⤴ Self-evaluation/reflection

### *Student objectives*

In completing this project, a student will

- ✦ Complete an inventory of interests, skills, accomplishments, and career goals.
- ✦ Choose an academic area in which the student has the skills and interests to do extended work.
- ✦ Select and work with an advisor to plan the scope and nature of the extended study and the original product to be created.
- ✦ Develop specific goals for the independent study and product creation.
- ✦ Develop a realistic and detailed project timeline.
- ✦ Complete planned independent study and produce original scientific, creative, or analytical product.
- ✦ Meet regularly with advisor to discuss progress.
- ✦ Submit drafts and revisions as instructed by advisor.
- ✦ Present project for peer review and make significant revisions prior to final submission.
- ✦ Complete a specific, detailed, quantitative, and qualitative evaluation based on project goals.
- ✦ Complete a self-evaluation and reflection on project experience.
- ✦ Deliver a formal presentation upon completion of the project.

### *Examples*

- ✦ A student extends his junior year research project or implements a practical application of the topic of his research.
- ✦ A student generates a polished piece of creative writing (short story or stories, one-act play, collected poems).
- ✦ A student produces an independent art show in the community.
- ✦ A student generates a series of artwork beyond that which is required for a Studio Art concentration.