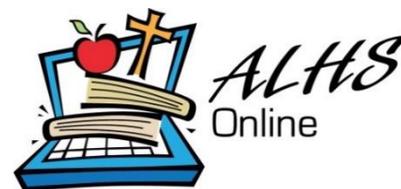


Da Vinci Club

Course Syllabus 2020-21



Instructor: Beth Dobberstein bdubby2001@yahoo.com

Title: Da Vinci Club

Grade Level: 9 - 12

Course Length: 1 semester (first semester)

Credit: 1/2 credit

Prerequisites: none

Description:

Flying machines, hydraulic lifts, anemometers, canons, scuba gear, robotic knights are just a few of the inventions created by Leonardo da Vinci. What does it take to be an inventor? This hands-on course will explore how to use science, technology, engineering, art, and math (STEAM) to create innovative inventions, and will incorporate experimental activities that promote creativity and critical thinking.

Course Outcomes:

Upon successful completion of this course, students will:

- Understand that engineering is a way of addressing human needs by applying science concepts and mathematical techniques to develop new products, tools, processes and systems.
- Understand that design is an analytical and creative process of devising a solution to meet a need or solve a specific problem.
- Understand that men and women throughout the history of all cultures and communities, have been involved in engineering design and scientific inquiry.
- Understand that Science, technology, engineering, art and mathematics rely on each other to enhance knowledge and understanding.
- Articulate informed evaluations of visual art works using selected criteria.
- Create replicas and original inventions.

Course Outline:

Lesson 1: The Scientific Method

Lesson 2: The Wheel

Lesson 3: Simple Machines

Lesson 4: Flying Machines

Lesson 5: Hydraulic Lifts

Lesson 6: Anemometers

Lesson 7: Canons

Lesson 8: Electricity

Lesson 9: Robotics

- Lesson 10: Bridges
- Lesson 11: Cameras
- Lesson 12: Tools
- Lesson 13: Telephones
- Lesson 14: Computers and the Future
- Lesson 15: Design Thinking and the Elements of Art
- Lesson 16: Final Project and Presentation

Course Materials:

- Recyclables – cardboard, tin cans, wood scraps, rope or yarn, hot glue gun, paper, duct tape, markers, paint, found objects. You can make the projects from your choice of materials based on what you may have on hand. For example legos, blocks, or clay/playdough.

Required textbook:

1001 Inventions That Changed the World: Challoner. Barron's Educational Series; For the Us & Can ed. edition (March 1, 2009)

Amazing Leonardo da Vinci Inventions You Can Build Yourself. Anderson. Nomad Press (January 1, 2006)

Required software:

none

Other needed course materials will be made available via the online Learning Manage System (LMS).

Evaluation & Grading Scale:

Assignments:

Each graded assignment in the course is assigned a certain number of points. The course percentage grade will be determined by comparing the points earned out of points possible and then converting to a letter grade based on the grading scale above. Late assignments will be loose points for being late. A student's current grade in the course will be available as we progress .

Grading Scale

98-100 A+	87-89 B+	87-89 C+	67-69 D+	
93-97 A	83-86 B	73-76 C	63-66 D	0-59 F
90-92 A-	80-82 B-	70+72 C-	60-62 D-	

Instructor Policies:

Expected of Students:

1. Check in on the course on a daily basis, Monday through Friday. Generally, students have been scheduled by their school to work on this course at a specific time each school day. Be faithful in using this time to work on this course. If you will be absent from class on a particular day, or if you miss class because of illness, be sure to let me know.
2. Expectations for this course are high, but reasonable. Everyone is very busy with their other courses, activities, and responsibilities, yet you are expected to complete all work on time. If you need an extension of time, please make the request via private email prior to the due date.
3. Communicate! If you have questions or concerns on a particular assignment or activity, please send me a private email or make a public posting in the Instructor's Office Forum. Good two-way communication is very important to having a successful experience!

ALHS Online Policies:

Current ALHS Online policies are listed in the *Handbook for ALHS Online Students and Parents*, available on the ALHSO.org website. This includes policies on non-discrimination, anti-harassment, student expectations, attendance, academic honesty, student discipline, student grades, course add/drop, etc.

Please note the policy on **class attendance** which states in part:

“Even if a student’s local school does not have school on a particular day (snow day, teacher’s conference, quarter break, choral fest, class trip, etc.) ALHS Online courses will continue to meet and students are expected to complete required work on time.”

Students also fall under the policies of the school were they attend as a full-time student. When applicable, these same local school policies will be applied to enrollment in this ALHSO course.