

Amie Karkainen, Principal

<http://tesla.lwsd.org>

Sumeyye Cardakli, Associate Principal

Phone 425-936-2770

Danielle O'Brien, Office Manager

School CEB Code: 480976



Nikola Tesla STEM High School is a science, technology, engineering and mathematics high school that uses Problem-Based Learning to prepare students for STEM professions. As a public choice school, a lottery-style system for enrollment is used. In class, students conduct research in STEM Lab Concentrations, investigate real world problems, and bring research and

debate into the equation while working towards viable solutions. Students enroll in, on average, 7 Science courses and 4 Math courses over the course of their high school career, with engineering and technology integrated into all grade level classes.

Foundational courses completed in the first two years at Tesla STEM include: Honors-level English, World Language, Physics, Math, Graphic Design, Computer Science, Engineering, AP Environmental Science, AP or Honors Biology, and Entrepreneurship. In their final two years, students work in either a defined STEM Lab Concentration or STEM pathway each year, conducting inquiry-based, original research to the level of publication and/or academic competitions. Lab Concentrations address the goals of the National Academy of Engineering's "Grand Challenges for Engineering" to support a bright and sustainable future on a global scale.

Tesla STEM Lab Concentrations/STEM Pathways

(Students may only enroll in 1 STEM lab each year. Labs are lottery-based if over-requested.)

Junior STEM Labs:

Environmental Science & Sustainable Design - Focuses on cause/effect and the science of global climate change, along with a strong emphasis on central lab themes of engineering and sustainability solutions. *Dual credit available via University of Washington.*

Forensics & Psychology - Engages students in systems biology problem solving, applying forensic science knowledge to engineer crime maps & data bases, and provides students with innovative thinking. Students apply understanding of the brain & psychology to solve problems and analyze criminal behavior and crime trends. *Dual credit via University of Washington/AP credit available.*

Senior STEM Labs:

Advanced Physics & Global Engineering - Advanced Physics focuses on extensive mathematical modeling of physical phenomena and calculus-based problem solving. Students make extensive use of hardware to investigate phenomena, apply physical/mathematical understanding and create new devices. *AP credits (AP Physics C: M + EM) available.*

Biomedical Engineering STEM Lab - Honors Human Anatomy and Physiology is taught in tandem with Advanced Biomedical Engineering. The human body systems are explored using various vertebrate models. Knowledge is then applied in a project-based learning format which teaches modern lab techniques and creates innovative solutions to real world problems. Students investigate how our changing planet is impacting human health and explore how sustainability is at the interface of modern biomedical science. *Dual credit available via University of Washington.*

STEM Pathways (available to all grade levels):

Engineering Pathway—Our Engineering 1, 2 & Engr 3/StartUps courses are hands-on project based courses that emphasize the engineering design process with increasing complexity, rapid prototyping & presentation of large-scale projects. *Dual credit available via University of Texas.*

Computer Sciences Pathway—Our sequential Computer Science courses include increasing levels of computational thinking, data abstraction, beginning through advanced programming, and mobile development. Students at all levels participate in contest-based experiences. *AP credits available for the lower-level courses.*

TESLA STEM CLASS OF 2025

SENIOR CLASS SIZE: 139

CO 2025 AVERAGE GPA: 3.63
ALL-SCHOOL AVERAGE GPA: 3.66
(un-weighted, on a 4.0 scale)
TESLA STEM DOES NOT RANK

TESLA STEM GRADING SCALE*

A	100-90%
B+	89-87%
B	86-83%
B-	82-80%
C+	79-77%
C	76-73%
C-	72-70%
P (Pass, w/ credit)^	60-69%
NC or N (No Credit)^	-59%

[^]P, NC & N grades do not impact GPA

GPA DISTRIBUTION: CO 2025

3.9-4.0	54 (39%)
3.5-3.89	41 (29%)
3.0-3.49	31 (22%)
<3.0	13 (9%)

FALL 2024

21 NATIONAL MERIT SEMI-FINALISTS
37 COMMENDED MERIT SCHOLARS
63 AP SCHOLARS
74 AP SCHOLARS W/ HONORS
228 AP SCHOLARS W/ DISTINCTION

SAT (CLASS OF 2024 MEAN SCORES)

TESLA: COMP 1402 MATH: 717 ERW: 685
(WASH ST: COMP 1081 MATH 531 ERW: 549)

ACT (CLASS OF 2024 MEAN SCORES)

TESLA COMPOSITE: 32.1
(WASH STATE COMPOSITE: 24.5)

2024 AP EXAM MEAN SCORES

TESLA AP PASS RATE: 89%
BIOLOGY: 4.1 (WA STATE: 3.3)
CALCULUS AB: 4.2 (WA STATE: 3.6)
CALCULUS BC: 4.2 (WA STATE: 3.9)
CHEMISTRY: 3.9 (WA STATE: 3.4)
COMPUTER SCI A: 4.1 (WA STATE: 3.3)
COMP SCI PRINCIPLES: 4.2 (WA STATE: 3.4)
ENGLISH LANGUAGE: 3.9 (WA STATE: 3.1)
ENVIRO SCIENCE: 3.8 (WA STATE: 2.9)
PHYSICS C E&M: 3.7 (WA STATE: 3.6)
PHYSICS C MECHANICS: 4.0 (WA STATE: 3.6)
PSYCHOLOGY: 4.7 (WA STATE: 3.1)
STATISTICS: 4.2 (WA STATE: 3.1)

OUTSIDE OF THE CLASSROOM

Central to our school mission is to develop students' ability to apply learning with an integrated and problem-based approach. Tesla STEM students practice the presentation of long-term projects in all classes, and all students participate in academic competitions. Scholars demonstrate ability to apply these skills outside the classroom setting with the following:

PROJECTS

PROJECT AWARDS EARNED AT:

- INTEL ISEF COMPETITION
- CONGRESSIONAL APPS CHALLENGE
- TECHNOLOGY STUDENT ASSOCIATION
- VERIZON APPS CHALLENGE

COMPETITIONS

AWARDS EARNED AT:

- **WA STATE SCIENCE & ENGINEERING FAIR:** MULTIPLE AWARDS INCLUDING GENIUS OLYMPIAD AND GOLD PRIZE AWARD
- **CENTRAL SOUND SCIENCE FAIR:** GRAND PRIZE WINNER AND MULTIPLE AWARDS EARNED
- **HUNT THE WUMPUS MICROSOFT COMPETITION:** MULTIPLE AWARDS EARNED
- **NATIONAL HISTORY DAY:** NATIONAL STATE AWARDS

PRESENTATIONS

AWARD-EARNING PRESENTATIONS AT:

- **MODEL UN:** OUTSTANDING DELEGATE AWARD
- **HOSA:** NATIONAL AND STATE AWARDS
- **FBLA:** NATIONAL AND STATE AWARDS

OTHER NOTABLE CLUBS/ORGANIZATIONS

- EQUITY CLUB
- STEM STARTUPS
- MAKER CLUB
- STEM REACH
- KEY CLUB
- NATIONAL SCIENCE BOWL CLUB
- ART HONOR SOCIETY
- TED CLUB

Diploma Requirements:

Credit requirements for all grade levels can be accessed at <http://www.lwsd.org/programs-and-services/curriculum-instruction/high-school-guide/>

Tesla STEM offers the typical state minimum requirements in Humanities, enabling our students to maximize opportunities in STEM-based curriculum.

NIKOLA TESLA STEM HIGH SCHOOL

4301 228TH AVENUE NE
REDMOND, WA 98053
P: 425-936-2770

Tesla STEM Information &
COURSE CATALOG:

<https://tesla.lwsd.org/about-us>

T-STEM Internships/Mentorships

As a critical component in STEM education, our students work in partnership with school staff, college professors, industry experts, and community leaders in a combined effort to further support and enrich students' interests and curiosity. Currently our Internship & Mentorships opportunities are embedded within our STEM labs and Business classes.

Some business partners include:

Aerojet — Institute for Systems Biology
Genie/Terex Corp
VA Ventures—Starbucks
Inventcor — Integrus Architecture
MicroGreen — Microsoft
Sustainability Ambassadors/Redmond
Washington State Patrol Crime Lab
Waste Management

2020-24 graduates have gone on to attend many colleges, including:

(*more than 5 students) *Bellevue College, *Cal Poly, Caltech, Carnegie Mellon, Cornell, Duke, *Georgia Tech, Gonzaga, Harvard, Harvey Mudd, Johns Hopkins, MIT, *Northeastern, Princeton, *Purdue, * Rice, *Stanford, *Oregon State, Rensselaer Polytech, RIT, *Seattle University, *UC Berkeley, *UC Davis, *UC Irvine, University of Chicago, *UI – Urbana, *UW – Bothell, *UW – Seattle, *U of British Columbia, U of San Diego, U of Waterloo, *WSU, *Western Washington U, Washington U, Whitman, & many more!

Highest level of coursework offered by STEM pathway:

Biological Sciences: Anatomy/Biomedical Engineering, AP Chemistry

Physical Sciences: AP Physics C, AP Chemistry, AP Calc BC

Computer Science: Advanced Projects, AP Calculus BC

Engineering: Engr 2 or 3, AP Physics C

ACADEMIC COUNSELORS:

Molly Touran (last names A-Kn)
Chase Covington (last names Ko-P)
Kelly Wescott (last names Q-Z)

Academic & Accelerated Curriculum

AP/dual-credit/accelerated courses are available to any students who meet the prerequisite coursework

Courses	Core Academic Requirement	Honors/AP/ Accelerated/ Dual Credit
9th/10th Gr English	ELA	Honors
English Lang 11th Gr	ELA	Honors or AP
World Literature/ARC	ELA	Accelerated
U.S. History	Social Studies	Honors
Contemp World Probs	Social Studies	Honors
Civics	Social Studies	
Economics	Social Studies	
Psychology	Social Studies	AP
Algebra 2	Math	Honors
Pre-Calculus	Math	Honors
Calculus AB	Math	AP
Calculus BC	Math	AP
Statistics	Math	AP
Physics	Science	Honors
Physics C: Mechanics + Electrical & Magnetic	Science	AP
Chemistry	Science	Honors & AP
Biology	Science	BC Dual Cr & AP
Environmental Science	Science	AP
Forensics	Science	UWHS Dual Credit
Environ Engineering & Sustainable Design	Science	UWHS Dual Credit
Anatomy & Physiology	Science	Honors, UWHS Dual Cr
Biomedical Engineering	Science	Accelerated
Comp Sci Principles	Science, Math	AP
Computer Science A	Science, Math	AP
Data Structures	Occ Ed	Accelerated (post-AP)
Advanced Projects	Occ Ed	Accelerated (post-AP)
Graphic Design	Fine Arts	CTE Dual Credit
Choir/Orchestra	Fine Arts	(after school only)
Spanish I, II, III	World Lang	Honors
Engineering I, II, III	Occ Ed	UT-A Dual Credit/ Accelerated
Business/Marketing	Occ Ed	CTE Dual Credit