

Hatchling Development Program

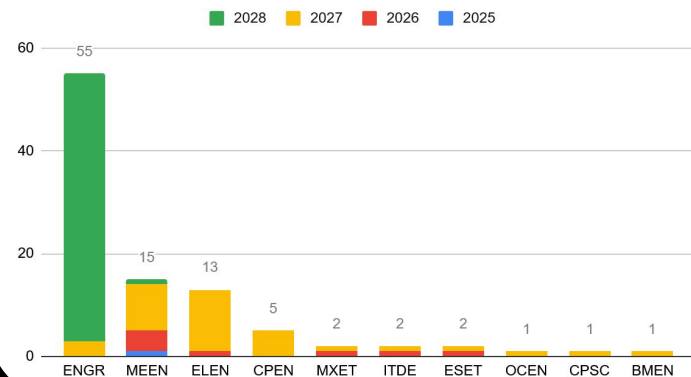
Founded Fall 2015



Spring 2025 Snapshot

- 100 members led by 8 student leaders
- 70% entered without prior engineering experience
- 95% of participants would recommend the program to others
- Gender- and ethnically diverse team

Hatchling Spring 2025 Class Year and Distribution



With your support, we can
continue breaking barriers,
expanding access, and
preparing the next
generation of engineers

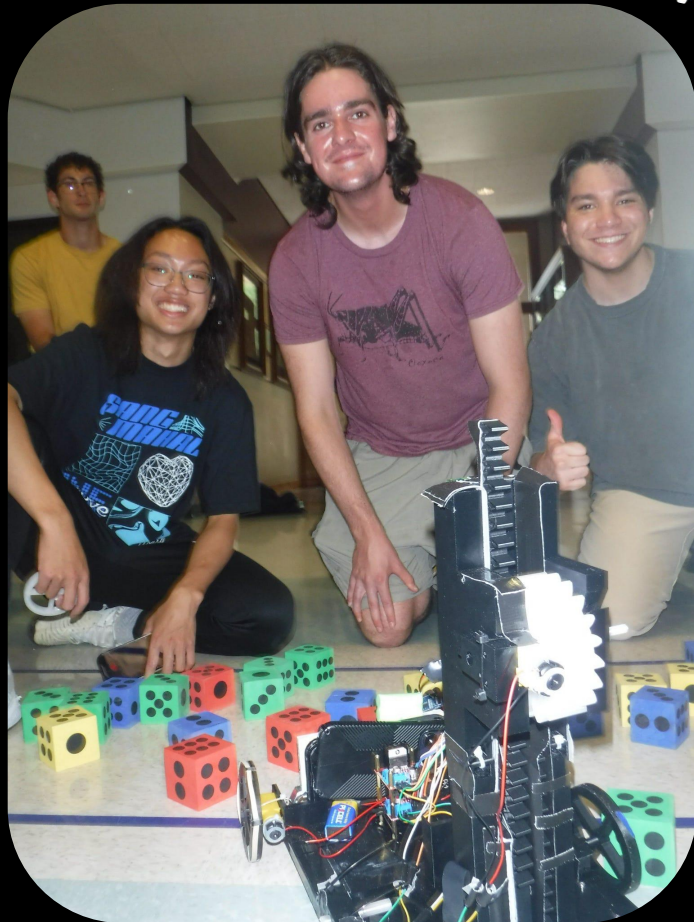


Mission Statement

Fostering growth in undergraduate engineers by providing the tools, support, and real-world experience they need to build strong communication, problem-solving, and engineering skills. We achieve this through carefully designed technical lectures paired with a collaborative, hands-on, semester-long project that encourages teamwork and practical application of knowledge.

Feedback Response

"Hatchling's environment is very warm and welcoming, perfect for anyone who is just starting out and doesn't know much yet. I loved being around people who were there to have fun and build robots together. More importantly, Hatchling gave me the chance to grow as an engineer in a field that usually demands prior skills, helping me take my first steps into robotics with great support." – Spring 2025 Graduate





Impact

- Hatchling graduates go on to leadership positions:
 - 90% of all-time Hatchling Directors
 - 100% of Treasurers since 2016
 - 50% of all-time senior leadership, project leads, and officers
 - 3 active presidents in 100+ member TAMU student engineering organizations
- Internship and Research Positions (Summer 2025)
 - Texas A&M Engineering Experiment Station
 - The Boring Company
 - Selector AI
 - TEKsystems (Full-Time)
 - City of Victoria, Texas
 - DEVCOM Army Research Laboratory
 - REUs and TAMU Research Labs
 - And more
- SolidWorks Certifications (CSWA and CSWP)





Learning Objectives

- SolidWorks (CAD) Competency
 - Design custom parts and modify assemblies
 - Reading and designing around manufacturing constraints
- Electronics
 - Evaluating hardware specifications and datasheets
 - Circuit design and implementation
- Programming
 - Utilize Git/GitHub
 - Control hardware via a microcontroller
 - Python and C++
- Manufacturing
 - Soldering and crimping
 - Additive manufacturing
- Problem Solving and Critical Thinking
 - Teams go through the design process from concept creation to testing





Schedule – 3 Meetings a Week (Repeated Lectures)

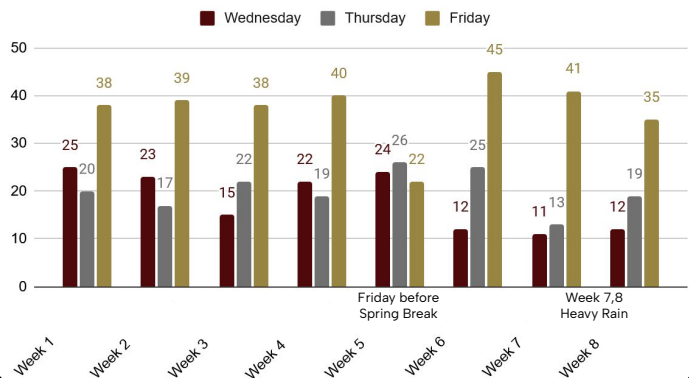
- Week 1: Introductions
- Week 2: SolidWorks (CAD) Foundation
- Week 3: SolidWorks 3D
- Week 4: Tools, Project, and Process
- **Week 5:** SolidWorks Assembly
- Week 6: Design Review and C++
- **Week 7:** Programming and Git/GitHub
- Week 8: Electronics and Soldering
- **Week 9:** Prototype Week
- **Week 10:** Build Week

***Orange** indicates a project milestone*



Hatchling Spring 2025 Attendance

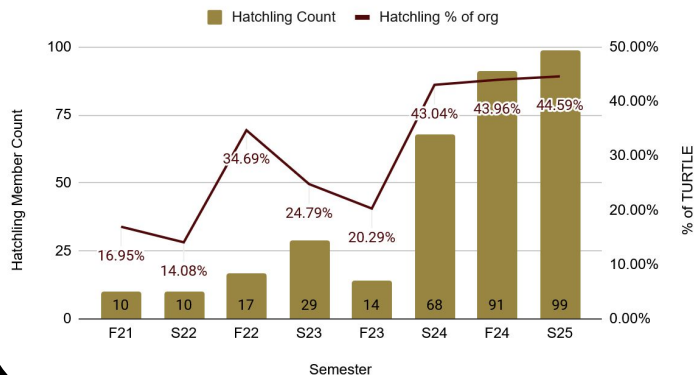
Member count : 99



This Semester Stats

- Average lecture attendance of 75 members (75% of Hatchlings)
 - Total of 794 sign-ins across all 10 weeks
 - 100% of people who attended a meeting joined TURTLE and participated in a club social
- 16 teams completed their project (60%)
- 90% gave a perfect 10/10 star experience rating
- Net-positive program budget of \$3000
 - 50/50 split for supplies and shirts
 - ~\$400 in one-time program investments

Hatchling Growth by Semester



Additional

- Surpassed 500 all-time Hatchling members
- Restructured internal structure & documentation for long term (10+ years) sustainability
- Introduced in-house Hatchling robot controller
 - Provides greater project freedom when incentivizing software solutions



Fall 2025 Goals

- Inaugural Professional Development Workshop Series semester (Hatchling supplemental)
- Introduce V2 of Hatchling ESP32-based Controller with PCB / dev board variants
 - Estimated controller production cost – \$254.92 / \$196.85 per 10 units
- Extend team skills in software and embedded systems, with emphasis on
 - Git/GitHub , C++ , Linux, and Hardware Integration
- Expansion to external student organizations and public
 - 3 organizations have entered into a collaboration agreement
 - Inaugural College Station Interorganizational Cup
 - Hatchling materials posted on TURTLE website
 - Lectures recorded and posted on YouTube

Long-term Investment Goals

- Form Incubator Development Program (Hatchling sequel)
 - Specialized tracks in mechanical, software, or electrical
- Lab equipment
 - Pair of robotic arms as an experimental testbed for skill development
 - Additional 3D-Printers (Expand rapid prototyping capacity)
 - Existing 4 printers runs full-time during project phases
 - Additional soldering stations / workstations





Hatchling, A Decade of Advancing Texas A&M's Engineering Standards