

# Stem 1 - Robotics

Teacher: Mrs. Moses

**ALSDE Course Description:** STEM Technologies I provides students with knowledge and processes needed to begin their attainment of technological literacy and awareness of careers in science, technology, engineering, and mathematics. Students gain knowledge and skills in the application, design, production, and assessment of products, services, and systems in a variety of areas.

**Hartselle Intermediate School Description:** At Hartselle Intermediate School, we will meet the state requirements for this course primarily using VEX IQ robotics. Students will learn about VEX IQ, coding best practices, the engineering design process, documentation, problem solving, communication, and many more life skills! We will also explore engineering concepts and complete hands-on challenges. Students in 6th grade will also learn about VEX V5RC (the robotics program used for 7th-12th grade) after the IQ season ends.

**Prerequisites:** None

## Supply List:

Please bring the following items with you to class each day.

- Pencils
- Color Pencils and/or Highlighters
- Glue Sticks
- *Charged* Chromebooks
- Loose-Leaf Paper
- HIS Planner
- headphones/earbuds
- Folder (or small designated section in a binder to keep up with any notes or papers from day to day)
- Flash Drive (Recommended but NOT required)
  - Must be new and cannot be used in any other devices for security purposes.
  - Students may take it with them or leave it with their team robot/supplies.
  - Please label it with your name!
  - Walmart has onn brand for approx. \$4. They work great. They don't have to have a large capacity!

**Instructional Delivery Plan:** We will use online learning platforms and hands-on learning through teacher demonstration and student application via individual assignments, group work, and projects. A large portion of this class will include student participation on their assigned robotics team or drone team. Participation includes planning, documenting, coding, building, testing, and communicating.

**Homework:** There will be limited homework in this course; however, there will be times students need to plan or finish assignments or complete their planning documents for an upcoming project or task.

If any homework is assigned or students must finish an assignment at home, it is due before class starts the following day. They are responsible for turning it in when they arrive in class.

### **Primary Course Objectives**

The primary goal of this course is to prepare students for the STEM/Engineering and Computer Science Pathways at HJHS and HHS while developing problem solving and critical thinking skills. Additionally, students will...

1. learn how to build and program a robot.
2. learn about different careers that utilize robots.
3. explore and compare different types of robots.
4. demonstrate their knowledge and understanding in hands-on activities and challenges throughout the year.
5. actively participate and engage with their fellow classmates to increase their understanding of course concepts.

### **ALSDE Foundational Standards**

1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and following protocols for fire and electrical safety.
2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.
3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.
4. Demonstrate digital literacy by using digital and electronic tools appropriately, safely, and ethically.
5. Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.

### **CTSO (Career Tech Student Organization) Integration**

All students in this course are part of the VEX Robotics Competition Team. We will integrate VEX and TSA (Technical Student Association) concepts into this course as we complete assignments, challenges, and competitions throughout the year.

### **Embedded Numeracy**

Students will be exposed to math concepts throughout the course. Numbers and math play a critical role in programming. Majority of the concepts have already been introduced to students through their math classes.

### **Embedded Literacy**

Students will continuously build on the concepts they have learned in this course. By the end of the course, they should be able to describe and explain their plan to design and code a robot, assemble robots correctly according to written instructions, and program the robot in order to perform a specific task or challenge.

### **Embedded Science**

Students will engage in activities that help them improve their final robots and their understanding of science concepts. The primary science concept we will explore this year is velocity - it plays a vital role in both robot movement and completing this year's VEX IQ challenge!

### **Anchor Project**

All embedded literacy, numeracy, and science lead toward one culminating anchor project - a unique VEX IQ Robot ready to compete!

### **Industry Recognized Credentials**

Not applicable to this course - Students will be given this opportunity in higher level courses at HHS.

### **Attendance Matters!**

A large portion of project grades will depend on hands-on building and group participation. If you are absent regularly when your group builds, it could impact your course average. Please always check Google Classroom any time you are absent to see if there is an assignment/alternate assignment for the day.

### **Self Advocacy**

I am ALWAYS open to parent questions; however, I encourage students to ask questions and try to find solutions on their own! Speaking up for yourself in a respectful way is a valuable skill! On the robotics team, it is a requirement! VEX has a student centered policy and students and parents will both be expected to adhere to the policy.

### **Robotics Team and Saturday Commitments**

Students in the 6th grade robotics classes are part of the robotics team. There will be Saturday competitions. You MUST communicate with me if you are unable to attend. If you are unable to attend, there will be an alternate assignment students will be expected to complete. I do ask because this is a team and each person plays a role that you make every effort to attend all of the competitions.

I have hosted a competition for Vex V5RC at HJHS for the last two years. I would love to host one for IQ at HIS this year! Parent help will be crucial in order to successfully host.

### **Contact Information**

Email is the best way to contact me. I am always more than happy to schedule a time to talk on the phone when students are not currently in my classroom, but email is the quickest way to get in touch with me for questions or to schedule a phone call or conference time.

Email: [cheyenne.moses@hartselletigers.org](mailto:cheyenne.moses@hartselletigers.org)

Remind Group Code (a QR code is at the end of the syllabus): 764gk4

### **Google Classroom**

There should be a Google Classroom navigation video posted at the top of the “classwork” tab in Google Classroom for my course. Students will also receive an overview in class. I encourage all parents to watch the video with their students! I have tried to cover all of the features and it should be applicable in all classes that use Google Classroom - not just this one!

Google Classroom Class Codes (only join the class for your assigned class period):

1st Period: ithws5h

2nd Period: hh6gb5q

To join Google Classroom, sign in and click the “+” in the top right hand corner of the screen. A box will pop up for you to enter the class code.

### **Parent Google Classroom Information**

Parents can get summaries from Google Classroom. Your student should be able to “invite” you. I can also add you on my side as well. If you would like to be added and didn’t complete the parent information form at Open House, please complete the form and indicate that you would like me to add you to Google Classroom so you can receive summaries. This will add you for all of the classes your student is enrolled in. This view will be different from the student view. In order to see everything your student sees, you will need to have your student log in to show you or have their information.

### **Grading Scale**

This course follows the Hartselle City Schools grading scale.

A - 90% - 100%

B - 80% - 89%

C - 70% - 79%

D - 60% - 69%

F - 59% and below

### **Grading Percentages**

Course grades will have the following assigned weights:

Major Grades: Tests/Projects - 60%

Minor Grades: Class Activities/Mini-Projects - 30%

Homework: 10% (Because I do not assign typical homework, this will be their grade for uploading their evidence to their Student Led Conference Site each nine weeks. They will learn more about this in their history classes.)

### **Grading Policies**

I do my best to grade everything within 3 days. I try to grade in class as students complete the assignment/task and provide immediate feedback whenever possible. Larger projects will take longer to provide more attention to detail and detailed feedback. I do my best to add comments and feedback in PowerSchool as well as the student's Google Classroom.

### **Make-Up Work**

You have one calendar week from the day you are absent to submit make-up work.

- **Sooner is better** - many assignments will relate to the robots and the competitions. This means that a lot of the work will be documentation for your engineering notebooks. We want to keep them as organized as possible and add things in order.
- If I have "lectured" or demonstrated something new, I will record my computer screen and the lecture to post on Google Classroom along with the assignment.

Submit the missed assignment form at the top of "Classwork" in Google Classroom for all make-up work. You must do this for any paper or digital assignments!

Notable sections from the HCS Student handbook about make-up work:

- Students who are absent are required to make up work missed in each class. It is the student's responsibility to obtain all make-up work from his/her teacher(s) immediately upon return to school.
- Long term assignments, such as research papers, special projects, etc. are still due on or before the due date even if the student is absent on the date the assignment is due.
- Students with unexcused absences will make up work for partial credit - grade will be calculated equal to 70% of the earned score.

For unexcused absences: If I have already graded the assignment and calculated it at 70% of the grade but an excuse was turned in and the PowerSchool absence was changed after the grade was posted, there will be a section of the missed assignment form to indicate this. There is not a time limit for students to submit the form for assignments in the current nine weeks for this purpose!

### **Late Work**

- I will accept late work for up to two weeks OR the end of the unit - whichever is first.
- Late work will only receive HALF of the earned credit.
- The late work window is from the initial due date
  - If you are absent, you will still have your 1 week period for make-up work, but you will only have 1 additional week for it to be considered late work.

You MUST fill out the missed assignment form at the top of "Classwork" in Google Classroom. This is for both digital and paper assignments. I will not grade them without the form!

### Missed Assignment Form

- The missed assignment form is required to be submitted for all late work or makeup work.
- I will go through this with students in class and we will practice submitting it.
- It can be found at the top of the “Classwork” tab on Google Classroom.
- This form will close the Monday before each nine weeks ends and no late work will be accepted at that time. I will remind students before this happens!

### Tiger Way Expectations



### Class Rules

Students are expected to...

- Respect each other
- Respect Mrs. Moses (or any other adult in the room)
- Respect the classroom equipment
- Show up with their required supplies each day
- Be ready to learn
- Complete work in a timely manner and ask questions when needed
- Listen attentively to instructions and follow directions

No gum, food, drinks, or candy will be allowed in class!

## Class Procedures/Do's and Don'ts/Specific Expectations

### Entering the classroom

Students are expected to...

- Find their seat and begin the warm up on the board
- Store backpacks under desks (if this becomes a problem we will designate a section of the room to store backpacks during class time).

Do's

- Get supplies out
- Sharpen pencils
- Turn in work
- Check the board for warm ups
- Put away all food, drink, and/or candy
- Spit out gum

Don'ts

- Ask questions in the doorway
- Surround me in the doorway while I'm greeting students
- Continue to socialize instead of beginning the warm-up

\*All warm-ups will be posted on Google Classroom with the assignment for the day.

### Exiting the classroom

Students are expected to...

- Remain seated until dismissed
- Make sure their area is clean and all supplies are put away

Do's

- Make sure your area is clean
- Throw all trash away
- Put all class supplies away in the correct area
- Push your chair in
- Walk - Don't run

Don'ts

- Leave trash out
- Push others
- Leave your chair out
- Leave supplies out

### Independent Work

Independent work should be completed *individually*.

Do's

- Work on the current assignment
- Raise your hand for help

Don'ts

- Walk around the classroom

- Talk to/distract other students from their work
- Yell across the room for help

### **Partner/Group Work**

This class contains a lot of partner or group work. Please make sure you are working together responsibly. All partners/group members should be actively contributing to the group in order to receive credit. If you do not contribute to the group, you will not receive credit.

#### **Do's**

- Work on the current assignment
- Raise your hand for help from the teacher
- Respect the opinions of ALL group members
- Actively participate and contribute to your group

#### **Don'ts**

- Walk around the classroom (this does not mean students can't go get robot parts or needed supplies - they shouldn't be roaming)
- Talk to/distract other groups from their projects
- Yell across the room for help
- Exclude group members
- Refuse to help your group

### **Turning in Work**

- Check the assignment details to make sure you are submitting your assignment correctly
  - We will go over how to submit each type of assignment and practice together as a class when introducing a new online platform or assignment type.
- Coding assignments - these will vary based on the assignment and coding platform used.
- Google Classroom - Assignments completed on Google Classroom digitally will be submitted there. Make sure you click the "submit" or "turn in" button!
- Worksheets - Worksheets will be submitted in one of the following ways
  - Glued into the coding notebook (computer science)
  - Uploaded to the digital engineering notebook (robotics)
  - Turned in to the turn in tray
    - Make sure it has your name
    - Make sure it is in the tray for your class!

### **Pencil Sharpener**

- The pencil sharpener is currently located by the door.
- You are allowed to use it AS NEEDED. This means you do not have to ask me to use it; however, it should be used at appropriate times.
- If you have a personal handheld sharpener that catches the shavings, you may use it at your desk at any time!
- I recommend having a back-up pencil if you do not have a personal sharpener.

Good times to use the pencil sharpener:

- During independent work time



- During partner or group work time
- BEFORE class starts

Bad times to use the pencil sharpener:

- When the teacher is talking
- During class instruction/in the middle of a lesson
- When another student is asking a question during instruction time

### **Leaving the Room During Class Time**

Students should not miss instruction time unless absolutely necessary! I will not go back and cover what is missed if a student leaves during instruction. They will need to watch the recording later or get notes to see what is missed. It isn't fair to everyone else in the room if we have to cover the same thing multiple times because people are leaving.

Students should only leave if there is an emergency and they are not able to wait. They will be required to sign in and out and document the times and reason they are leaving.

- Bathroom - you should go to the bathroom between classes.
- Water - You should get water between classes. There is a fountain right outside of my room!
- Nurse - You should only go to the nurse if you are bleeding or sick! The nurse is here to help - she isn't an excuse to roam the halls and miss class.

### **Snack Time/2nd Breakfast Expectations**

- All classroom equipment should be put away before snack time.
- Make sure you clean up all of your trash and wipe any crumbs/food/spills off of the tables.
- If you spill something, you are responsible for cleaning it up!

### **Lunch Time Expectations**

- If you have lunch with me, we will go as a class.
- You will clean up 2-3 minutes before the bell rings to end lunch.
- We will have designated table washers each day.
- All tables must be cleared and trash thrown away.
- The tables and floors are not to be left dirty.
- We will return to the room as a class.

### **Technology and Chromebooks**

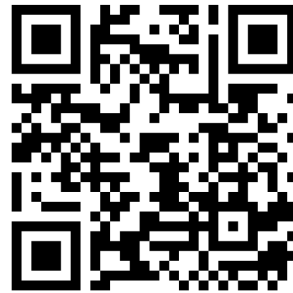
Students are not allowed to have phones or use smart watches as phones throughout the day. They should be stored in their locker.

Students should not access any website they have not been given permission to access by the teacher. This includes websites for other classes. Students will be given a list of tasks to choose from if they finish an assignment early.

### Consequences

1. Student Conference/Students sign documentation log
2. Student will complete the Tiger Way reflection form.
  - a. Parent will be contacted.
  - b. It will be documented in the classroom log
3. Lunch Detention
  - a. Parent will be contacted.
  - b. It will be documented in the classroom log
4. Office Referral

Parents - Please fill out the contact form by scanning the QR Code! This lets me know your contact preferences and ensures I have up-to date information for you!



6th Grade Robotics  
Remind



Technology/  
Computer Science  
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