

ROBOTICS COURSE OVERVIEW

Mr. Thompson
mhthompson@crista.net
206-546-7241

King's High
2017-2018

Course Description:

This course provides an introduction to robotics for students with no programming background using LEGO MINDSTORMS EV3 kits. Students will learn to construct, control and program these robots through investigative and exploration activities. Research projects will expose the students to the engineering process.

Course Objectives:

1. Introduce students to programming mobile robots using LEGO MINDSTORMS EV3:
 - Motors and rotation, and sensors (sound, light, touch and ultrasonic)
 - Programming using the NXT-G graphical programming language
 - Robot navigation and path planning
 - Systems and systems analysis
 - Experimental process
 - Communicating results through formal project documentation
2. Integrate Science, Technology, Engineering & Mathematics using STEM Education concepts:
 - Engineering process
 - Time management
 - Project management
 - Problem solving and teamwork

Homework Page:

- <http://www.mhthompson.com> and visit the Robotics page

Textbook:

- None required

Grading:

- | | |
|---|--|
| 40% - Activities, investigations and explorations | 10% - classroom behavior and participation |
| 40% - Major projects | 10% - team participation and contribution |

Classroom Rules:

1. Be in the lab, ready to work and learn when the bell rings.
2. Follow directions the first time they are given.
3. Treat the robot kits with care and respect...they will be used for years to come!
4. Respect your fellow students' right to a quiet & productive learning environment.
5. Do **NOT** touch any of the machinery, tools or non-LEGO parts in the lab!
6. Act like an adult, treated as an adult. Act like a child, treated as a child.
7. Mr. Thompson dismisses the class, not the bell or clock.

As always, the school's student conduct expectations are upheld. See the *School Handbook for Parents and Students* for more detail.

Classroom Procedures:

- Start of class: get out robots/kits and get to work!
- End of class:
 - Put away/secure robots/kits (all extra parts in storage box, robot in cubby-hole)

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- Robot kits
 - You will be assigned a numbered Mindstorms kit which you must sign for.
 - If you lose or damage any kit pieces, you must pay for the replacement.
 - All robot kits and parts must stay in the lab or designated area at all times.
 - If you do not turn in a complete kit at the end of the term, you will receive an incomplete until the full kit is complete.
- Computer work
 - Computers are to be used for class work / projects.
 - No food, gum or drinks around the computers.
 - At class end: log out, push in chairs, and pick up trash.
- Late work
 - NO LATE work will be accepted unless a student has an excused absence.
 - Depending on the number of days of excused absences, students will receive the same number of days to make up the work missed.
 - Students will receive 2 GRACE COUPONS to be used for late assignments. Once both GRACE COUPONS are used, late work receives a zero. NO EXCEPTIONS. Each unused GRACE COUPON earns the student 1 point grace on the final test/project.
- Absences and Tardiness
 - The school's absence & tardiness policies are followed. See the *School Handbook for Parents and Students* for more detail.
 - Be responsible - find out what you missed and make it up.
- Use it and lose it
 - Cell phones, iPods, the like ... use it in class and you lose it for the day.

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Dear Parents and students,

Please review, sign and return this to me by Friday, Feb 2nd.

I believe an important key to your student's success is that the three critical members of this learning team are on the same page. Please feel free to contact me with any questions. Up-to-date contact information is always available on my website <http://www.mhthompson.com>. Thank you for your support and I look forward to a fun and successful year in our Robotics course.

Printed Student Name: _____

I have reviewed and understand the class overview, rules, procedures and Mr. Thompson's classroom management plan.

Parent Signature: _____ Date: _____

Student Signature: _____ Date: _____

Teacher Signature: _____ Date: _____