INDUSTRIAL TECHNOLOGY
Automation and Robotics

7th and 8th Grade       Mr. Pentecost

Course Description:
Students will trace the history, development, and influence of automation and robotics. You will learn about mechanical systems, energy transfer, machine automation and computer control systems. Students will acquire knowledge and skills in problem solving, teamwork, collaboration, and innovation while using a complex robotics platform to design, build, and program solutions that solve existing problems. Students acquire knowledge and skills in engineering problem solving and explore requirements for careers in engineering.

Background:
The Gateway To Technology® (GTT) cutting-edge program addresses the interest and energy of middle school students, while incorporating national standards in mathematics, science, and technology. GTT is “activity oriented” to show students how technology is used in engineering to solve everyday problems in units of study. There are currently two units of study offered at LJHS – Automation and Robotics and Design and Modeling.

The GTT curriculum provides project-based learning—a hands-on approach—that is exciting and fun for the full-range of students in today’s Junior High classrooms and that relates technology to students’ daily lives. It also promotes communication and collaboration by emphasizing a teaming approach in the instructional units. This approach utilizes the strengths of each team member to accomplish the goals of the project, while offering students learning challenges at all ability levels.

The GTT program is designated as a S.T.E.M. program and is aimed at providing students with a well-defined set of knowledge and skills related to Science, Technology, Engineering, and Math.

Objectives:
1. To develop an understanding and working knowledge of Science, Technology, Engineering, and Math.
2. To develop an understanding of what robots are used for and the effect they have on our lives.
3. To develop a measure of knowledge and skill in a complex robotics platform to solve existing problems.
4. To develop an understanding of how a robot receives information through various sources.
5. To explore different career opportunities presented through robotics.
6. To develop problem solving and decision making skills.
7. To develop a well-balanced sense of pride and responsibility.
8. To develop safe working habits in an industrial type setting.
9. To develop an attitude of self-improvement and an appreciation for accuracy and neatness.
Industrial Technology
Automation & Robotics
Course Syllabus

Procedures, Content, and Methods:

This course will be comprised of:

- Lecture/discussion sessions
- Journal entries
- Research projects and presentations
- Mechanical assembly projects
- Automation/programming activities

Each student will be expected to become actively involved in discussions, participate in and complete all robotics activities, and complete an accurate portfolio (including an Engineer’s notebook).

Evaluation:

The evaluation of student progress will be based on the following:

1. **Class attendance and Participation**
   - Grading Scale
     - 90-100 = A
     - 80-89 = B
     - 70-79 = C
     - 60-69 = D
     - Below 60 = F

   Pluses and minuses will be figured in according to the schools grading scale.

NOTE: Each student will be expected to pay a $5.00 fee to cover consumable supplies used in various Automation/Robotics and problem solving activities throughout the semester.

STUDENT’S NAME ________________________________

PARENT SIGNATURE ______________________________