

LBMS Engineering Syllabus for 5 Day Classes

Instructor: Mr. Kurt Thonnings

Contact Info:

- thonnings@wlake.org or thonnings@mywlake.org
- School: 440-835-6340 ext 2353

Big Picture

- Think. Imagine. Create. Dream. Build. Transform. Observe. Evaluate. Apply. Improve. Solve. Adapt.
- Imagine/design a better world
- Problem Solving / Design Process / STEM

The Numbers...

Class Length: 12 weeks

Frequency:

- 5 days a week (for students in music)
- 40 minute periods

Required class items



- Permission slip
- Composition book (can be used from a previous class/year)
- Pencil
- Cheap earbuds (To be kept in class at all times. For listening to video instructions or other videos)
- Shoebox (for storage of project materials, pencil and earbuds)
- (Optional donation – Kleenex or hand sanitizer)

Class Rules

Rules are very important in this classroom. They help everyone know what to do and help keep everyone safe.

- *School-wide* rules – **the Burneson Way** – is meant to identify general behavior that when followed by all, would best promote learning and growth. (Listen and Learn, Be Respectful, Make Responsible Decisions, Strive for Excellence)
- The *Engineering class* rules are specific to the environment and philosophy of this class and teacher, again, to promote the best environment for learning and growth.

BE PROACTIVE
BEGIN WITH THE END IN MIND
PUT FIRST THINGS FIRST
I THINK WIN-WIN
SEEK FIRST TO UNDERSTAND
THEN TO BE UNDERSTOOD
SYNERGIZE
SHARPEN THE SAW

Consequences

Purpose/goal of consequences:

Stop to Reflect

Print your name:
Date:
Period:

Note: If your writing is unreadable, contains little content, or does not reflect your responsibility of the actions you chose to display, you will be asked to immediately complete another form.

Some kind of action of yours interrupted the class. Please describe what YOU did or said.

Do you believe that your disruption was helpful to the class in any way? (Circle one) YES NO
If you circled Yes, please explain.

Was there someone or something that 'made' you do this behavior that the teacher should know about? (Circle one) YES NO
If you circled Yes, please explain.

- Personally 'owning' the mistake,
- Fixing" the mistake,
- Learning from the mistake, and
- Evolving to be a better student and effective member of a *group* of students.

Actions:

- Stop and Reflect (written by student and kept on file in classroom). This is NOT a detention with the intention of bringing awareness of personal behavior to the student. Often, the student is immediately allowed to rejoin class activities.
- Call home to parents
- Detention
- At times, a student might be asked to temporarily go into the hall should that be necessary to allow the rest of the class to work on required activities.

Class Procedures

- **Being Tardy to class:** Students are required to be on time to class. When you know you will be late, please ask the previous teacher to write you a pass.
- **Bathroom breaks,** going to your locker, etc.: It would be appreciated if students could please use the restroom before coming to class; however, permission will be granted but only after daily instructions have been given. Students will be given a signed and dated pass. The pass is to be returned to the teacher upon arrival back the class.
- **Questions:** Ask lots of questions, but please raise your hand.
- **Clean-up:** All students will be required to help in some fashion to clean-up after activities
- **Seating Arrangements:** Many of the activities in this class are small group activities. Seating arrangements might be assigned or change from activity to activity. Students might be moved at any time for any reason.
- **Cell phones:** Cellular phones of any type are not allowed in any classroom at any time.

Grades

The student is responsible for keeping up with assignments and checking Engineering grade periodically on PowerSchool. Please feel free to ask any questions.

Grading Overview/Absence Procedures

Most activities in these classes follow rubrics and can be found on the pages within the <https://thonnings.blog> website.

- If a student is not able to complete the assignment by the due day because of absence or other need, it is *the student's responsibility* to approach the teacher about make-up.
- **A zero will be recorded in the grade book until the work is turned in.** Up to 75% credit will be given to those who complete the work -outside of class time – and turn it in within 2 weeks of the due date. After two weeks, up to 50% credit can be obtained.

- If a student is absent, they will be given the appropriate amount of time to complete the assignment. Note that a 'zero' will be put into the grade book until the assignment has been turned in. Please refer to the LBMS' Student Handbook for school-wide grading and attendance policy.
- Please note that if missed class while 'group' projects were being worked on, you may be assigned some out-of-class work as makeup. This is a 'hands-on' class and many activities are impossible to make up from an absence the same way the activity is experienced in class.

Late work or Makeup Turn-in Procedures

- To turn in work to be re-graded, students should fill out their name, period, and what they'd like to be graded on the clipboard on the laptop cart. Please do NOT turn in electronic work to Google Classroom WITHOUT also notifying the teacher.

Homework

There will be some homework given during the term. Each assignment will be 10 to 15 points

Activities

Students will receive grades for most completed activities based upon the following criteria:

- **20% Completed on time** (individually graded)
- **50% Individual Effort** (individually graded)
 - Observable participation (use of tools, measuring, focused discussion, etc.)
 - Full use of available time
 - Teamwork skills
 - Cleanup duties
- **30% Workmanship / Preciseness / Knowledge of content** (individually graded)
 - Quality of completed work
 - Knowledge gained by quiz, verbal questioning, presentation, etc.
 - Following directions from lecture, written steps, video explanations, etc.

Topics per class

See <https://thonnings.blog> for more detailed information on individual activities

7th grade 2 days/week

- Basic sketching
- Design process and creativity techniques
- Introduction to Solar power

7th grade-5 days/week

- Basic sketching
- 3D software and Printing
- Design process and creativity techniques
- Junior Solar Sprint project
- Basic electronics
- Engineering Brightness project

8th grade -2 days/week

- Design Process activities
- Long term group project
- Individual or small group presentation

8th grade -5 days/week

- Architecture unit
- KidWind Challenge
- Robotics
- Powering with the sun
- Introduction to drones