How to contact Mr. Ebbert:
E-Mail: jebbert@volusia.k12.fl.us

Policies that apply to ALL classes:

Tutoring:
Tutoring is available before school, at lunch, or after school by appointment. I strongly encourage ALL students to help each other understand by working together and using the discussion groups in Canvas. The goal is understanding. Working together does NOT mean dividing up the work, nor does it mean copying other people's work, neither of which is allowed.

Assignments:
All daily assignments are due by the start of class on the next day after they are assigned. Daily assignments are not always graded but may be graded using a variety of methods. These assignments are part of the initial learning process and need to be thoroughly attempted. Daily assignments may be graded. I use random-interval reinforcement for daily assignments, so I do not announce ahead of time if I am going to grade them. Assume they WILL be graded. Assignments are meant to be learning opportunities. Even when they are not graded, they have value and are an important part of the learning process.

Most assignments are “Long-Term Assignments” (LTAs) to allow for extended time to work on the assignment. These assignments should be completed over an extended period of time instead of trying to do the whole thing the day it is due. Long-Term Assignments (LTAs) will be submitted online and graded as a formative assessment. These assignments must be submitted before the due date and time. If you have a power or Internet problem, you must give me a paper copy first thing the next day, but this should not happen more than once per quarter. LTAs will be graded.

All assignments MUST only contain your own work, unless otherwise specified in writing on that assignment. A variety of grading methods will be used on these assignments. If you do not submit the assignment by the due date, it will earn no credit. Assignments often have questions similar to those appearing on quizzes or tests.

Bring to class every day:
Bring your notebook, assignments, paper, and pencil with you every day. You may use a pen sometimes, but other times a pencil will be needed so it is best to bring both. Every day you are expected to have paper for an assignment AND your notes out and open BEFORE class starts (along with other supplies). Always bring a pencil!!!! You are encouraged to bring a laptop if desired. I have a computer lab, but they are old, slow, and pathetic computers.

Quizzes and Tests:
Expect all quizzes and tests to be cumulative. Our goal is long-term learning, therefore I “spiral” my quizzes and tests to include previous topics (sometimes called scaffolding). This encourages long-term learning, which is always our goal. Math, Computer Science, and Physics are all cumulative subjects in which prior learning is required for further study, so testing and quizzing this way is an obvious choice.
Always be ready for an unannounced quiz which will count as a formative grade. Quizzes provide feedback and allow you to monitor your progress. Knowing your strengths and weaknesses helps you to improve. The quizzes also make excellent study guides for tests. Only the quizzes you were present for will be averaged so you do not need to make-up missed quizzes, assuming you had a legitimate absence. *You may not “skip” quizzes intentionally. If you skip my class to avoid a quiz you will get a referral for skipping and you will have to make-up the quiz by taking a different quiz.

Tests are announced ahead of time. Check Gradebook for upcoming tests. We will have at least three “summatives” each quarter whenever possible. Summatives will almost always be tests, but in some classes, may also include Internal Assessments or other major activities. Some tests may have questions that require the use of a graphing calculator, in which case you can use your own or one of mine. You may not share calculators during quizzes or tests. Many tests and quizzes are “no calculator” which means no calculating device of any kinds may be used during those quizzes and tests, including, but not limited to graphing calculators, computers, “smart” watches, or any device with external communication capability (Bluetooth, wi-fi, cellular, etc) (this part only applies for the second semester).  †You may not “skip” tests intentionally. If you skip my class to avoid a test you will get a referral for skipping and you will have to make-up the test by taking a different test.

Semester Grades:
If you have an “F” for either quarter grade and a “C” or higher for the other quarter grade during a semester, then your semester grade will be based on the numeric average of the two nine-weeks percent grades and the default grade will be overridden if needed. For example, a grade of 71% (C) and 49% (F) averages to a 59% (F). So, your semester grade would be an “F”. If you have no “F” grades during a semester or an “F” and a “D” then the County default averaging is used.

Grading:
Assignments:
Late work will not be accepted (except as noted by County policy for extended absences, which provides one day for each consecutive day of absence to submit work). All work must be the student’s own work. Getting help is encouraged, but this is not the same thing as having someone else do the work for you. Copying someone else’s assignment or having someone tell you exactly how to do each step of a problem is NOT the same as getting help. Likewise, finding solutions on-line or using an app and copying those solutions is not acceptable. Assignments may be graded based on correct work and correct answers or using some other rubric or combination of rubrics. The exact grading method is NOT typically announced ahead of time, thereby using random interval reinforcement. Assignments will count in the formative grading category unless otherwise noted.

Quizzes:
Quizzes count in the formative category unless otherwise noted. Students do not need to make-up missed quizzes as I only count the quizzes they are present for*.

Tests:
Tests count as summatives. If you miss a test, you must make it up as soon as possible during lunch (a little less time), after school, or possibly during class. Students have one day for each day they are absent to make-up missed work and tests. Please check with me about making up the test as soon as you return. Failure to make-up a test in a timely manner will result in a zero on that test. You may not intentionally “skip” tests†.
My “retest” policy:
Each test will also count as a “retest” for the previous test. This means that if your score is higher on the current test, it will replace the score on the previous test. The first test of a new quarter ALSO counts as a “retest” for the last test of the previous quarter. If a test is lower than your previous test grade, then it does not replace anything (because it would have lowered your grade). The replacement of your grade is NOT automatic, as I must do the replacement by hand. Therefore, you may not see this happen immediately. However, keep watching and make sure it gets replaced before grades are due!

**Academic honesty:**
Academic honesty is non-negotiable. Without honest academic work, grades do not reflect the actual skills, knowledge, and understanding of the student. Any form of cheating will NOT be tolerated. This includes but is not limited to: plagiarism, obtaining quiz or test answers from other students or sources other than your own mind, copying assignments, using unauthorized devices (calculators, cell-phones, telnet, etc.) during quizzes or tests, using “crib sheets” during quizzes or tests, notes written on body parts, shoes, clothes, etc., or any other attempts to be academically dishonest. Any of these forms of cheating will result in a zero on the assignment, quiz, or test, and may result in additional disciplinary action, including possible program eligibility consequences. Remember that ultimately, when you cheat you are just cheating yourself out of learning… and learning is what we are supposed to be here for.

**Additional Policies applying to my AP courses only:**

All students in an AP course are expected to take the AP exam for that course. Please refer to our school policy:

"In order for students to receive weighted (1.0) credit for an Advanced Placement course, they are expected to take the AP examination in May. If a student misses an Advanced Placement examination, the name of the class will be changed to an Honors class (i.e. English Language AP to English III Honors) and the class weighting will be changed to a 4.5 instead of a 5.0 for an "A"." NOTE: The word “honors” does not always appear in 4.5 weighted classes. For example, Calculus (non-AP) is just called Calculus.”

Additionally, if you do not take the AP exam, you will have an obligation for the cost of ordering the test.

**Additional Policies applying to my IB courses only:**

IB students are held to an even higher standard. Please refer to the IB materials you have received from the IB coordinator. Academic dishonesty may result in dismissal from the IB program. Non-completion of Internal Assessments will result in dismissal from the IB program as Internal Assessments are an essential part of the program. Missing IB exams will result in significant financial obligations as these exams are costly.
Expected Levels of Understanding (Bloom’s Taxonomy):

Understanding of the subject matter and the process of approaching, organizing, and solving problems requires more than just a rote memorization of facts. True understanding requires many levels of thought. I will be looking for the following levels of understanding, based on Bloom’s Taxonomy, in all forms of evaluation in all of my classes:

Knowledge:
Although some alteration of the material may be required, the primary task is remembering information.

Comprehension:
This is the lowest level of understanding. This is the ability to make use of material or an idea without necessarily relating it to other material or seeing its fullest implications.

Application:
This involves correctly choosing an appropriate method of solving a problem when no mode of solution is specified.

Analysis:
Breaking information into its constituent elements so the relative hierarchy of ideas is made clear and the relations between the ideas are made explicit.

Synthesis:
The putting together of elements to form a whole. Creating a pattern or structure that was not clearly there before. Using ideas you have learned in a new way or in a new combination of ways.

Evaluation:
Making judgments. Quantitative and qualitative judgments about the extent to which material and methods satisfy criteria. Deciding which method will produce the best results. Use of a standard of appraisal. The criteria may be determined by the student or may be provided.

Learning is not just about “jumping through hoops” or being able to mimic the procedures demonstrated by the teacher. True learning requires developing an understanding of the topics and being able to process this understanding and adapt to new situations.

Standards for Mathematical Practice:
Bloom’s Taxonomy and the Mathematical Thinking and Reasoning Standards both speak to the idea of UNDERSTANDING Mathematics, Computer Science, and/or Physics. This requires far more than just being able to mimic procedures or solve problems that are all nearly identical. We are trying to create students who can understand and apply what they learn. That can only be accomplished by practicing the process of applying knowledge in new situations.

### Syllabi:

These topics will incorporate the Bloom’s Taxonomy levels of understanding and the Mathematical Thinking and Reasoning Standards. Throughout these courses, SAT, ACT, AP, and IB review will be interwoven into the curriculum wherever possible.
**AP Calculus (AB):**
A more detailed list is available online on the College Board website. Check the College Board website for the most up-to-date topic list.

Topics:
- Functions, graphs, and limits
  - Analysis of functions and graphs
  - Limits
  - Asymptotic and unbounded behavior
  - Continuity
- Derivatives
  - Conceptual understanding
  - Slope at a point on a curve
  - The derivative function
  - The second derivative and concavity
  - Applications of derivatives
  - Techniques for computing derivatives
    - Derivatives of basic function types
    - Rules for derivatives of sums, products, quotients, and composite functions
    - Implicit differentiation and the chain rule
- Integrals
  - Definite integrals and Riemann sums
  - Integrals as accumulators of rates of change over an interval
  - Geometric properties of integrals
  - Applications of integration
  - The fundamental theorems of calculus
  - Techniques of antidifferentiation
  - Applications of antidifferentiation
  - Solving separable differential equations and applying them to modeling
  - Numerical approximations

**IB Mathematics Analysis and Approaches SL/HL combined with BC Calculus**
A more detailed list is available online on the College Board and International Baccalaureate websites. This is an outline of major topics for IB:
- Numbers and Algebra
- Functions
- Geometry and Trigonometry
- Statistics and Probability
- Calculus

Students will submit a mathematical Internal Assessment according to the requirements of IB. These will count towards the class grade AND be externally moderated and counted towards the overall IB grade.

See the topic list for BC Calculus for additional topics.

**AP Calculus BC (including Mathematics AA students who also take the BC exam):**
A detailed topic list is available online on the College Board website. This course extends many of the topics from AP Calculus AB plus includes additional calculus topics such as polar, parametric, and simple vector equations; sequences and series, including Taylor and Maclaurin Series and Power Series. Check the College Board website for the most up-to-date topic list.

Students testing out of IB Mathematics at any level will also have a required Internal Assessment.
AP Computer Science (A):

Check the College Board website for the most up-to-date topic list which also contains more details.

Outline of major topics:
- Object-Oriented Program Design
- Program Implementation
- Program Analysis
- Standard Data Structures
- Standard Algorithms
- Computing in Context

Additional details:
- Computing in context
  - Major hardware components
    - Primary and secondary memory
    - Processors
    - Peripherals
- System software
  - Language translators/compilers
  - Virtual machines
  - Operating systems
- Responsible use of computer systems
  - Privacy
  - Legal issues and intellectual property
  - Social and ethical ramifications
- Program analysis
  - Representations of numbers in different bases
  - Constraints to storage of numbers in memory
  - Testing
  - Debugging
  - Reasoning from pre- and post-conditions
- Object-Oriented program design
  - Understanding problem statements through pre- and post-conditions
  - Applying data abstraction and encapsulation
  - Relationships among classes ("is-a" and "has-a")
  - Class hierarchy
  - Creating reusable components with documentation
  - Class design
    - Designing and implementing a class
    - Choosing appropriate data representations and algorithms
    - Applying functional decomposition
    - Extending a class using inheritance
- Program implementation
  - Implementation techniques
  - Programming constructs
  - Declaration
  - Input/Output
  - Control
**IB Computer Science 2 (SL):**

A complete topic listing with details is available on the International Baccalaureate website.

Outline of major topics:
- Systems life cycle and software development
  - The systems life cycle
  - Systems analysis
  - Systems design
  - Social significance and implications of computer systems
  - Software life cycle
  - Software design
  - Documentation
- Program construction in Java
  - Refer to various paper hand-outs and the textbook for details.
- Computing system fundamentals
  - Language translators
  - Computer architecture
  - Computer systems
  - Networked computer systems
  - Data representation
  - Errors
  - Utility software
- Analysis and practice with the case study

Topics from AP Computer Science (A) will be included and expanded upon.

Students will submit an Internal Assessment involving the complete development process of a major program.

**IB Computer Science 3 (HL):**

A complete topic listing with details is available on the International Baccalaureate website. HL includes all of the topics from SL but approached at a higher level of understanding. Additionally, HL students have these added topics:
- Computer mathematics and logic
  - Number systems and representations
  - Boolean logic
- Abstract data structures and algorithms
  - Fundamentals
  - Static data structures
  - Dynamic data structures
  - Objects in problem solutions
  - Recursion
  - Algorithm evaluation
- Further system fundamentals
  - Processor configuration
  - Magnetic disk storage
  - Operating systems and utilities
  - Further network fundamentals
  - Computer/peripheral communication
- File organization
- Analysis and practice with an *extended* case study

Topics from AP Computer Science (A) and IB Computer Science 2 will be included and expanded upon.

Students will submit an Internal Assessment involving the complete development process of a major program and incorporating higher-level constructs.
AP and IB Physics Courses:

These courses will include the curriculum as outlined by the official AP and IB curriculum outlines published by the College Board and International Baccalaureate. These documents are available online. Please check online for the most up-to-date curriculum guides. Due to the large number of options available and the multiple courses combined into one class period, the advanced-level Physics classes may contain a significant amount of learning that is at least partially based on independent-study.

Students testing out of IB Physics at any level will also have a required Internal Assessment.

Here is a rough outline of the topics for the IB SL and HL Physics courses:

IB Physics Core Topics (for both SL and HL):

Topic 1: Measurements and uncertainties
  1.1 – Measurements in physics
  1.2 – Uncertainties and errors
  1.3 – Vectors and scalars

Topic 2: Mechanics
  2.1 – Motion
  2.2 – Forces
  2.3 – Work, energy, and power
  2.4 – Momentum and impulse

Topic 3: Thermal physics
  3.1 – Thermal concepts
  3.2 – Modelling a gas

Topic 4: Waves
  4.1 – Oscillations
  4.2 – Travelling waves
  4.3 – Wave characteristics
  4.4 – Wave behaviour
  4.5 – Standing waves

Topic 5: Electricity and magnetism
  5.1 – Electric fields
  5.2 – Heating effect of electric currents
  5.3 – Electric cells
  5.4 – Magnetic effects of electric currents

Topic 6: Circular motion and gravitation
  6.1 – Circular motion
  6.2 – Newton’s law of gravitation

Topic 7: Atomic, nuclear and particle physics
  7.1 – Discrete energy and radioactivity
  7.2 – Nuclear reactions
  7.3 – The structure of matter

Topic 8: Energy production
  8.1 – Energy sources
  8.2 – Thermal energy transfer
Additional higher level (AHL) topics:

Topic 9: Wave phenomena
  9.1 – Simple harmonic motion
  9.2 – Single-slit diffraction
  9.3 – Interference
  9.4 – Resolution
  9.5 – Doppler effect

Topic 10: Fields
  10.1 – Describing fields
  10.2 – Fields at work

Topic 11: Electromagnetic induction
  11.1 – Electromagnetic induction
  11.2 – Power generation and transmission
  11.3 – Capacitance

Topic 12: Quantum and nuclear physics
  12.1 – The interaction of matter with radiation
  12.2 – Nuclear physics

IB Physics Options  15 hours (SL)/25 hours (HL)
Note: I recommend option B for my students, but they may choose a different option if desired.

Option A: Relativity

Core topics
  A.1 – The beginnings of relativity
  A.2 – Lorentz transformations
  A.3 – Spacetime diagrams

Additional higher level topics
  A.4 – Relativistic mechanics (HL only)
  A.5 – General relativity (HL only)

Option B: Engineering physics

Core topics
  B.1 – Rigid bodies and rotational dynamics
  B.2 – Thermodynamics

Additional higher level topics
  B.3 – Fluids and fluid dynamics (HL only)
  B.4 – Forced vibrations and resonance (HL only)
Option C: Imaging

Core topics
C.1 – Introduction to imaging
C.2 – Imaging instrumentation
C.3 – Fibre optics

Additional higher level topics
C.4 – Medical imaging (HL only)

Option D: Astrophysics

Core topics
D.1 – Stellar quantities
D.2 – Stellar characteristics and stellar evolution
D.3 – Cosmology

Additional higher level topics
D.4 – Stellar processes (HL only)
D.5 – Further cosmology (HL only)