**Advanced Placement Biology 2017-2018**

Mr. Charneske and Ms. Diepholz

Room 3-103 Room 3-102

**Email:** dcharnes@pasco.k12.fl.us and jdiephol@pasco.k12.fl.us

**Grades:** myStudent

**Summer Assignment:** Accessible on the WRHS School Website, <http://wrhs.pasco.k12.fl.us/>.

**Course Description:**

Advanced Placement (AP) Biology is a course that is designed to be the equivalent of a first year, biology college course. As such, the course is suitable only for high school students who are (or will be) particularly able in biology. Students cultivate their understanding of biology through inquiry-based investigations as they explore the following topics: evolution, cellular processes—energy and communication, genetics, information transfer, ecology, and interactions.

This course requires that 25% of the instructional time will be spent in hands-on laboratory work, with an emphasis on inquiry-based investigations that provide students with opportunities to apply the science practices.

Since AP Biology students at Wiregrass Ranch High School (WRHS) are enrolled in a college level class, they need to exhibit unusually high levels of commitment, motivation and academic maturity. In order to strive for excellence in this course you must have already completes high school courses biology and chemistry successfully.

**Summer Break/Summer Assignment Info:**

Students are expected to complete a summer assignment that will be posted on the WRHS School Website, <http://wrhs.pasco.k12.fl.us/>.

Students are to complete the summer assignment which will be posted on the website at the top of the information sheet. **One of the assignments will be due via email on July 6th by 2pm. Make sure you complete this portion of the summer assignment as it will be counted as the first assignment of the 1st quarter**. It is recommended that students follow the attached *suggested* timeline for the summer assignment. Students are encouraged to contact Mr. Charneske or Ms. Diepholz through email over the summer if needed at dchanrnes@pasco.k12.fl.us and jdiephol@pasco.k12.fl.us.

Students will take an exam on the **second day of school** based on the summer assignment. Students who do not perform well on this exam are unlikely to be prepared to begin the course at a high level of performance and may struggle with the material going forward.

**Required/Suggested Materials:**

* Spiral notebook for lab days
* 2”-3” binder with 5 dividers
* Writing utensils, including pencils, black or dark blue pens, and highlighters
* At least one dry erase marker
* Paper for notes (another notebook or loose leaf)
* A review book (do not buy any yet because we will be deciding between the Princeton and Barron’s for the 2018-2019 school year)

**Late Work**

As this is an Advanced Placement class, late work is not an option. Due dates are not flexible and it is not my responsibility or problem if you fail to plan or attempt to plan at the last minute. If for some reason you honestly feel you have extenuating circumstances that justify a deviation from the late work policy, you must see me ***beforehand***. Talking to me about it when it is already due is unacceptable

**Make-Up Work**

If an absence is excused, you may turn in a make-up assignment. You have one day per day absent to make up any homework, class work or tests. It is totally up to you to approach me to find out what make-up work you have. Make-up tests will be at my discretion. If you know ahead of time that you will be out, please see me and I can give you work before you are absent.

**Grading Scale**

Your grade will be determined by a combination of factors, including homework assignments, tests and quizzes, and labs. The breakdown is as follows:

|  |  |
| --- | --- |
| Course Work | Percentage of Final Grade |
| Tests and Quizzes | 75% |
| Labs/Homework | 25% |

**AP BIOLOGY SUGGESTED TIMELINE FOR SUMMER ASSIGNMENT 2018-2019**

|  |  |  |
| --- | --- | --- |
| **Date(s)** | **SUGGESTED WORK** | **Assignments Due** |
| June 8th to July 6th  | Have fun! Enjoy your summer with your family and friends! When it gets to be July, be prepared to submit **Task 1** of your summer assignment via email. | **Task 1 of the Summer Assignment due July 6th by 2p.m. via email to** **dcharnes@pasco.k12.fl.us** **AND** **jdiephol@pasco.k12.fl.us** |
| July 9th to July 15th  | Complete **Task 2** of the summer assignment.  |  |
| July 16th to July 22nd  | Complete **Task 3** of the summer assignment. |  |
| July 23rd to July 29th  | Complete **Task 4** of the summer assignment.  |  |
| July 30th to August 5th  | Complete **Task 5** of the summer assignment.  |  |
| August 6th to August 12th  | Complete **Task 6** of the summer assignment.  | **Tasks 2-6 of the Summer Assignment are due Tuesday August 14th.** |
| August 14th  | **Summer assignment test in class.** | **Summer assignment is due.** |
| August 16th  | Pass back summer assignment test. |  |

There will be some students who will procrastinate and try to do **ALL** of this summer work and studying just before (like the night before) the start of school. Those students may even cram well enough to do well on the initial test. However, they will quickly forget key concepts that will be explored throughout the course, which will make the course much harder than it should be.

All research on human memory shows us that frequent, short periods of study, spread over long periods of time will produce much greater retention than long periods of study of a short period of time. Our direction in this course is about doing things the proper way to ensure success.

**2018-2019 AP Biology Summer Assignment**

There is a lot of material to cover and fun to be had before the AP exam next May. In order to jump-start our course and help you stay focused over the long summer break there are 6 tasks you will complete prior to the start of the course. These tasks are **required** and will be included as the first grades of the school year. **There will be a summer assignment exam on the second day of school (Tuesday August 14th), covering only the content included in the summer assignment**. The total point value for the summer assignment is **60 pts.** **NO LATE WORK will be accepted.**

You can reach out to either AP teacher throughout the summer with questions or concerns you have. (Response times may vary. We will do our best to respond within 72hrs.)

* **Mr. Charneske-** dcharnes@pasco.k12.fl.us
* **Ms. Diepholz-** jdiephol@pasco.k12.fl.us

**Task 1-** *Informational Email (10 pts.)*

* By **July 6th at 2pm** you will email Mr. Charneske **AND** Ms. Diepholz a message that includes the following….
	1. Your name
	2. Why you are taking the AP Biology course
	3. What you are most excited about for AP Biology ☺ And be specific
	4. Your AP course history (What have you taken? Did you enjoy them?)
	5. Your college or career aspirations (Where do you want to go? What do you want to major in?)
	6. Your favorite way to learn (Is it from lectures, textbooks, hands on activities, informational videos, artsy foldables, or anything else?)
	7. Your favorite thing about summer (Did you do/are going to do anything fun and exciting? Do you just like to relax on the couch? Are you a Netflix binger? If so, what do you watch? Etc…)
* The purpose of this task is to make sure that you are on task and adhere to deadlines and more importantly we want to learn a little about you before the course starts ☺.

**Task 2**- *Bozeman Videos (10 pts.)*

* Visit the website: <http://www.bozemanscience.com/ap-biology>
* Watch the video **42 (Biological Molecules)** and video **48 (Enzymes)** and complete the supplementary questions for each. The questions can be found at the bottom of the video pages. You are doing the questions submitted by **Winnie Litten** for both videos. *Your answers should be written legibly or typed.*

**Task 3**- *I Love Biology PowerPoint (12pts.)*

* Visit the website: <http://ilovebiology.net/new-ap-biology-powerpoints.html> and find the PowerPoint **4.A.1-Biomolecules**. This will help you preview some of the first topics we will discuss in AP biology and will be vital to understanding future topics in the course. As you are reading through the PowerPoint, answer the following questions. *Your answers should be written legibly or typed.*

**4.A.1- Biomolecules Questions**

1. Describe the difference between a monomer and a polymer.
2. Describe the difference between a dehydration reaction and a hydrolysis reaction.
	* + **Note:** You might want to include a diagram of both as well.
3. Which reaction from #2 connects nucleic acids?
4. What is the main function of nucleic acids?
5. Describe the importance of the R group on amino acids.
6. Describe the difference between primary, secondary, tertiary, and quaternary structures of proteins.
	* + **Note:** Pictures and diagrams would help here as well.
7. Which structure of proteins determines the shape, and thus function, of the protein?
8. What types of conditions could cause a protein to denature? What does denaturing mean?
9. Provide 3 examples of proteins denaturing in our bodies and give a reason why that would occur? Are there any times where denaturing a protein would be beneficial?
10. What are lipids used for? Why are they necessary in biology?
	* + **Note:** You can give various examples of how lipids are necessary in biology. They are used for many different things.
11. Describe the difference between saturated and unsaturated fats.
12. State the most you can about the molecule glucose. It is a very important molecule in AP Biology and you will **NEED** to know as much about it as possible.
	* + **Note:** How is glucose used? How is glucose made? What is the formula for glucose? What is the chemical structure for glucose? What type of biomolecule is glucose?

**Task 4**- *ATP Analogy (10 pts.)*

* ATP is one of the most important biological molecules we will talk about this year, so a thorough understanding of this molecule will directly link to your success in this class. For this task you will create an analogy that accurately reflects the function of ATP in cells. Your analogy should be synonymous with every aspect of ATP including but not limited to: ATP turning into ADP and vice versa, energy being released/absorbed, the molecule not being ‘used up’ in this process. You may need to do some additional research on these molecules depending on how much you remember from biology. *Your analogy should be written legibly or typed.*
	+ ***Sample:*** *A charged cell phone is ATP, but as it is ‘used’ the battery energy goes down becoming ADP (a lower energy molecule). Even though the battery is dead the phone is not destroyed, one must only ‘add’ energy to it in order for it to become ATP and work again.*

**Task 5**- *Water Model (12 pts.)*

* Water is an essential molecule for life. You must create an accurate model of water molecules and how they interact with each other. You have permission to use any material you would like for this, get creative! Your model must have **at least 3** H2O molecules present. **Below is the rubric that will be used to score this task.**

|  |  |
| --- | --- |
| Appropriate size of atoms🡪 **3 pts.** |  |
| Accurate bonds **within** molecule🡪 **3 pts.** |  |
| Accurate bonds **between** molecules🡪 **3 pts.** |  |
| Accurate polarity labeled🡪 **3 pts.** |  |
| **Total Points🡪 12 pts.** |  |

**Task 6**- *FRQ Practice (6 pts.)*

* The AP biology exam contains 8 Free Response Questions (FRQs) and consists of 50% of your AP exam score. Therefore, it is important that Mr. Charneske and Ms. Diepholz establish a baseline of your writing and analytical skills upon entering the course. This way we can help you can better improve weak areas and build upon the already solid areas. Below is a sample FRQ. Please answer the question fully and to the best of your ability. *Your answers should be written legibly or typed.* **You will not be graded on accuracy for this task but your full effort and academic integrity is expected.** Each part is worth 2 pts. for a total of 6 pts.

