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| --- |
| **AST 416**  |
| **Course Design & Lesson Instructions** |
| * + Each of the chapters covered in the AST 416 course is listed in chronological order in the OneNote course outline under the **Files** tab in **Teams**. Under each chapter heading you will find a list of topics that contain the key concepts covered and evaluated at the end of the year.

 * + Take note that under each concept/topic heading you will find associated lessons that are concept-driven and independent of classes. Some lessons require multiple classes, while others take less than one period to complete.

 * + During each of the lessons, it is assumed that you have the appropriate material. Most lessons will require you to have your **printed notes** and **workbook**. Occasionally you will need a **calculator** and your **textbook**. There are also **worksheets** that may accompany lessons. If you do not have them, they can be found in the **Files Tab** in **Teams**.
 |

**Text:    Observatory: The Environment**.

**Course Content:**

This course explains key topics in Applied Science and Technology 416:

|  |  |  |
| --- | --- | --- |
| **Term 1 (approx. 30 classes)**  | **Term 2 (approx. 30 classes)**  | **Term 3 (approx. 26 classes)**  |
| Electricity & Magnetism (Ch.5)  | Manufacturing Technical Objects (Ch.12) | Different Forms of Energy  (Ch.3) |
| Electrical Engineering (Ch.14) | Mechanical Engineering (Ch.13) | Changes of Matter (Ch.4) |
| Labs | Labs  | Lithosphere & Hydrosphere (Ch.6)  |
|   | Final Lab Exam (Circuits) | Atmosphere & Space (Ch.7)  |
|   | Midyear Exam | Labs |
|   |   | Final Technology Exam  |
|   |   | Final Theory Exam  |

**Evaluation:** Students will be evaluated on their ability to demonstrate these two competencies.

|  |  |
| --- | --- |
| **Applied Science & Technology Competencies** | **Weighting** |
| Seeks answers or solutions to scientific & technological problems.Communicates in the languages used in science and technology (projects, labs, lab/tech exams). | **C1**  Practical (**Labs**)40%  |
| Makes the most of his/her knowledge of science and technologyCommunicates in the languages used in science and technology(quizzes, tests, exams). | **C2** Theory (**Quizzes & Tests**)60%  |

**Final Mark Weightings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Each Term*** |  | ***Term 1*** | ***Term 2*** | ***Term 3*** |
| ***% Breakdown*** |  | ***20%*** | ***20%*** | ***60%*** |
| ***Practical (C1) 40%*** | *Labs 100%* | *8%* | *8%* | *24%* |
| ***Theory (C2) 60%***   | *Tests 70%*Quizzes 30% | *12%* | *12%* | *36%* |

***\*\*Note: The final Ministry exam is worth 50% of the C2 evaluation and is moderated.***

***Exams 2020-2021:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Term 2** | **Date/Month** | **Term 3** | **Date/Month** |
| **C1** | Final Lab Exam (Circuits) | December | Final Tech Exam | May |
| **C2** | Midterm Theory Exam | Week of February 1st | Final Ministry Theory Exam | June |

 **Final Exam Distribution and Weighting of the Questions (2019)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|   | **Number of Questions** **Per Part** | **The Living****World** | **The Earth** **& Space****(Ch. 6 & 7)** | **The Material** **World****(Ch. 3, 4, 5)** | **The Technological****World****(Ch. 12, 13, 14)** | **Weighting** |
| **Part A** | 15 | -- | 1 | 9 | 5 | **60%** |
| **Part B** | 4 | -- | 1 | 2 | 1 | **16%** |
| **Part C** | 6 | -- | -- | -- | 6 | **24%** |
| **Total** | **25** | **--** | **8%** | **44%** | **48%** | **100%** |

**\*\* Please Note:** A large percentage of the C1 evaluation is group work. The students (groups of 3) are expected to work together in the lab and collectively submit a report. All members of the group will receive the same evaluation. Labs and projects will be completed and submitted through Assignments. No submissions will be accepted on paper or through email. Students who miss labs or group work are expected to make arrangements to complete the lab and submit an individual report.