**NEU 120 The Brain Through Science Fiction**

**Course objectives**

**As a “Science as a Way of Knowing” course, you will be able to**

* Demonstrate understanding of the natural science content that is the focus of the course.
* Interpret and create multiple representations of data.
* Use scientific evidence to support or refute predictions made by scientific hypotheses, state the limitations of the scientific method, and identify unsubstantiated claims, such as those based on pseudoscience.
* Describe the process of scientific research, including aspects such as skepticism, ethics, collaboration, diversity of community, disparate impacts, funding, peer review, or the dissemination of results.
* Substantiate the claim that scientific knowledge inherently evolves over time as previous understandings are revised with new evidence and perspectives.

**Evaluation**

Exam 1 (20%)

In-class assignments (50%)

Final paper (30%)

**Success in NEU 120**

* Take notes. You may use your notes during in-class assignments and exams.
* Don’t be afraid to ask questions in class (most preferred), during student hours, or by email. If you are confused about a topic, odds are good that others may be confused as well.
* Be curious. Ask yourself “what if…” These types of questions challenge your recollection of course material and push you to think on a higher level.
* Utilize student hours and contact me by email. I’m here to help.

**Schedule (subject to change)**

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Lecture | Lecture Topic | Assignment due before class |
| 1 | 1 | Introduction |  |
|  | 2 | The Nervous System | [Chapter 2](https://www.austinlim.com/s/Open-Neuroscience-Initiative-Chapter-2-Anatomy-of-the-Nervous-System-77wl.pdf) |
| 2 | 3 | Mary Shelley’s *Frankenstein* | [Pages 49 – 60 (Chapters 4, part of 5)](https://docs.google.com/viewer?a=v&pid=sites&srcid=c3R1ZGVudC5iY3Nkbnkub3JnfG1yLWFsYmFuby1ob21lcGFnZXxneDo2MTYzNDAyY2ZjMmM1Y2Uz)[Giovanni Aldini…(Section “Aldini’s European Tour” on pages 580 – 582)](https://www.cambridge.org/core/services/aop-cambridge-core/content/view/B4C45DB05A84A158560E51EBA7292CFE/S0317167100003851a.pdf/div-class-title-giovanni-aldini-from-animal-electricity-to-human-brain-stimulation-div.pdf) |
|  | 4 | *Frankenstein* cont. | [Christiaan Barnard – The Surgeon…](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6062759/) |
| 3 | 5 | H.G. Wells’ *Island of Doctor Moreau* | [Chapter 14](https://gutenberg.org/files/159/159-h/159-h.htm#chap14) |
|  | 6 | *Doctor Moreau* cont. | [Animal Experiments… (Sections 6+7)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4495509/) |
| 4 | 7 | H.P. Lovecraft’s *Herbert West: Reanimator* | [Herbert West-Reanimator](https://hplovecraft.com/writings/texts/fiction/hwr.aspx) |
|  | **8** | *Reanimator* cont. | [Science and the Scientific Method](https://www.livescience.com/20896-science-scientific-method.html#:~:text=The%20steps%20of%20the%20scientific%20method%20go%20something,experiment%20that%20can%20be%20reproduced.%20More%20items...%20) |
| 5 | 9 | H.P. Lovecraft’s *Beyond the Wall of Sleep* | [Beyond the Wall of Sleep](https://www.hplovecraft.com/writings/texts/fiction/bws.aspx) |
|  | 10 | *Beyond the Wall of Sleep* cont. | [The Inventor of…](https://link.springer.com/article/10.1007/s00381-020-04564-z)[Neu](https://jnnp.bmj.com/content/jnnp/74/1/9.full.pdf)rological stamp (page 3) |
| 6 | 11 | Spice and substance use | [Why spice is a staple…](https://www.foodandwine.com/news/spice-science-fiction) |
|  |  | **Midterm** |  |
| 7 | 12 | Philip K. Dick’s *Do Androids Dream of Electric Sheep?* | Chapter 5, up to “We have you, Mister Deckard,” |
|  | 13 | *Do Androids Dream…* cont. | [A Review of behavioral tests…](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7382999/) |
| 8 | 14 | Cyberpunk and transhumanism | [Johnny Mnemonic](https://sporastudios.org/mark/courses/articles/Gibson_Johnny%20_Mnemonic.pdf) |
|  | 15 | Cyberpunkcont. | [Deep Brain Stimulation and…](https://www.michaeljfox.org/sites/default/files/media/document/DBS_Guide_12.09.21_0.pdf) |
| 9 |  | **Data presentation day** |  |
|  | 16 | *Memento* and amnesia | The Medial Temporal-Lobe… (D2L) |
| 10 | 17 | *Westworld, Inception,* and free will | [Optogenetics](https://web.stanford.edu/group/dlab/media/papers/deisserothnature2010.pdf) |
|  |  | Transhumanism journal club |  |