

## 课程详述

### COURSE SPECIFICATION

以下课程信息可能根据实际授课需要或在课程检讨之后产生变动。如对课程有任何疑问，请联系授课教师。

The course information as follows may be subject to change, either during the session because of unforeseen circumstances, or following review of the course at the end of the session. Queries about the course should be directed to the course instructor.

1.	课程名称 <b>Course Title</b>	科幻小说中的科学 (Science through Science Fiction)				
2.	授课院系 <b>Originating Department</b>	语言中心 Center for Language Education				
3.	课程编号 <b>Course Code</b>	CLE038				
4.	课程学分 <b>Credit Value</b>	2				
5.	课程类别 <b>Course Type</b>	通识选修课程 General Education (GE) Elective Courses				
6.	授课学期 <b>Semester</b>	夏季 Summer 或 秋季 Fall 或 春季 Spring				
7.	授课语言 <b>Teaching Language</b>	英文 English				
8.	授课教师、所属学系、联系方式 (如属团队授课, 请列明其他授课教师) <b>Instructor(s), Affiliation &amp; Contact</b> (For team teaching, please list all instructors)	Allison Dansie Email: allison@sustech.edu.cn				
9.	实验员/助教、所属学系、联系方式 <b>Tutor/TA(s), Contact</b>	无 NA				
10.	选课人数限额(可不填) <b>Maximum Enrolment (Optional)</b>					
11.	授课方式 <b>Delivery Method</b>	讲授 <b>Lectures</b>	习题/辅导/讨论 <b>Tutorials</b>	实验/实习 <b>Lab/Practical</b>	其它(请具体注明) <b>Other (Please specify)</b>	总学时 <b>Total</b>
	学时数 <b>Credit Hours</b>	32	0	0	0	32

12. 先修课程、其它学习要求 <b>Pre-requisites or Other Academic Requirements</b>	CLE030 EAP or CLE003 English for Academic Purposes III or GE2000
13. 后续课程、其它学习规划 <b>Courses for which this course is a pre-requisite</b>	无 (None)
14. 其它要求修读本课程的学系 <b>Cross-listing Dept.</b>	无 (None)

教学大纲及教学日历 SYLLABUS

15. 教学目标 **Course Objectives**

**Science Through Science Fiction** is a course in which students will analyze common themes from science fiction literature and film and explore how those themes serve as a lens to examine actual scientific disciplines. The course will cover issues such as genetic manipulation, color blindness, surrogate pregnancies, species extinction, conformity, equality, hunger and feeding the masses, neuro-manipulation of memories, and more. Students will develop vocabulary in physics, biology, mathematics, and the general sciences through the close analysis of not only a science fiction novel, but journal articles, book excerpts, podcast interviews, and film. Students will apply this newly acquired vocabulary to both speaking and short writing assignments so that successful English language strategies are practiced through the synthesis of science fiction and real science.

16. 预达学习成果 **Learning Outcomes**

By the end of this course, students will:

- understand and use successful vocabulary acquisition strategies such as the use of spaced repetition study apps and the study of collocations;
- fluently produce specialized vocabulary common to STEM coursework;
- be aware of and utilize methods for improving listening and pronunciation skills by using tools such as audiobooks, podcasts, and film;
- employ speaking strategies to synthesize themes in science fiction with current scientific research;
- successfully organize a comparison using a point-by-point rhetorical structure.

17. 课程内容及教学日历 (如授课语言以英文为主, 则课程内容介绍可以用英文; 如团队教学或模块教学, 教学日历须注明主讲人)

**Course Contents (in Parts/Chapters/Sections/Weeks. Please notify name of instructor for course section(s), if this is a team teaching or module course.)**

Course duration: 16 weeks

Tentative course contents:

Week	Topic	Texts
Week 1	Intro to Course  Vocabulary Strategies: Useful Apps	Clips from "Pleasantville"
Week 2	Presentation & Discussion Leader Skills  The Language of Comparison & Synthesis	Clips from "Eternal Sunshine of the Spotless Mind"
Week 3	Reading Strategies: Annotation  Listening Strategies: Audio Books	<i>The Giver</i> Chapters 1-2
Week 4	Themes: Genetic Selection, Surrogacy, Conformity, and Adoption in science fiction	<i>The Giver</i> Chapters 3-5
Week 5	Biology: Genetic Selection and Surrogacy in science  Listening/Pronunciation Strategies: Podcasts	Excerpt from <i>GMO Sapiens: The Life-Changing Science of Designer Babies</i> .  Sound excerpts from "American Surrogate" <i>Rough Translation, National Public Radio Podcast</i> .
Week 6	Themes: Parallel Dimensions, and Numerology in Cultural Ceremonies in science fiction	<i>The Giver</i> Chapters 6-8
Week 7	Physics: Parallel Dimensions in science	Excerpt from <i>The Hidden Reality: Parallel Universes and the Deep Laws of the Cosmos</i> .  Sound excerpts from "A Physicist Explains Why Parallel Universes Might Exist" <i>Fresh Air, National Public Radio Podcast</i> .

<b>Week 8</b>	Midterm	
<b>Week 9</b>	Themes: Neuro-manipulation and Memories, and Isolationism in science fiction	The Giver Chapters 9-11
<b>Week 10</b>	Biology: Memories and Neuroscience	Excerpts from “The Science of Memories,” <i>Scientific American Mind</i> .
<b>Week 11</b>	Themes: Color spectrums, population control and feeding the masses, and species extinction in science fiction	<i>The Giver</i> Chapters 12-14
<b>Week 12</b>	Physics: Color spectrums in science	Excerpts from <i>The Physics of Music and Color</i> .
<b>Week 13</b>	Themes: Eutopias and Dystopias, and violent gaming in science fiction	<i>The Giver</i> Chapters 15-17
<b>Week 14</b>	Themes: Music in science fiction	<i>The Giver</i> Chapters 18-20
<b>Week 15</b>	Mathematics and Physics: Music in the sciences	Excerpts from “Music, mind and mathematics: theory, reality and formality,” <i>Journal of Mathematics</i> .  Excerpts from <i>The Physics of Music and Color</i> .
<b>Week 16</b>	Resolving the end of the novel. Is it physics, biology, or...?	<i>The Giver</i> Chapters 21-end
<b>Week 16</b>	Science Fiction as a lens through which to examine our world	Final Student Comparison Projects
<b>Methods of assessments:</b>		
Attendance (10%)		
Participation (10%)		
Midterm Exam (20%)		
Presentation and Discussion Leader Assignment (20%)		
Comparative Assignment (10%)		
Final Exam (30%)		

18. 教材及其它参考资料 Textbook and Supplementary Readings

The main reference for this course are: novel, instructor's slides, and classroom lectures. A course pack will be provided. Sources for classroom instruction may include:

**Required Textbook:**

Lowry, L. (1993). *The Giver*. New York, NY: Houghton Mifflin Harcourt.

**Reference Materials:**

Greene, B. (2011). *The Hidden Reality: Parallel Universes and the Deep Laws of the Cosmos*. New York, NY: Vintage Books.

Gondry, M. (2004). *Eternal Sunshine of the Spotless Mind*. USA: Focus Features.

Gross, T. (2011, Jan 24). A Physicist Explains Why Parallel Universes Might Exist. *Fresh Air NPR Podcast*. Podcast retrieved from: <http://www.npr.org/2011/01/24/132932268/a-physicist-explains-why-parallel-universes-may-exist>

Gunther, L. (2014). *The Physics of Music and Color*. New York, NY: Springer Publishing.

Knoepfler, P. (2016). *GMO Sapiens: The Life-Changing Science of Designer Babies*. Hackensack, NJ: World Scientific Publishing Company.

McCune, M. (2017, September 5). American Surrogate. *Rough Translation NPR Podcast*. Podcast retrieved from: <http://www.npr.org/2017/09/06/548819214/rough-translation-american-surrogates>

Ross, G. (1998). *Pleasantville*. USA: New Line Cinema.

Wiggins, G.A. (2012). Music, mind and mathematics: theory, reality and formality. *Journal of Mathematics and Music*.V6 (2).

Upson, S. (2014, May/June). The Science of Memories. *Scientific American Mind*, V 25 (3).

课程评估 ASSESSMENT

19. 评估形式 Type of Assessment	评估时间 Time	占考试总成绩百分比 % of final score	违纪处罚 Penalty	备注 Notes
出勤 Attendance		10%		
课堂表现 Class Performance		10%		
小测验 Quiz				
课程项目 Projects				
平时作业 Assignments		30%		
期中考试 Mid-Term Test		20%		
期末考试 Final Exam		30%		
期末报告 Final Presentation				
其它（可根据需要 改写以上评估方 式） Others (The above may be modified as				

necessary)

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20. 记分方式 **GRADING SYSTEM**

- A. 十三级等级制 **Letter Grading**  
 B. 二级记分制 (通过/不通过) **Pass/Fail Grading**

课程审批 **REVIEW AND APPROVAL**

21. 本课程设置已经过以下责任人/委员会审议通过

**This Course has been approved by the following person or committee of authority**

语言中心 Center for Language Education (CLE)

