

**NOTE: Fall 2021 anticipated to be in person, but this syllabus from Fall 2020, but provides info on topics included in class**

**ENST 495: Senior Seminar**

**Section Units: 4**

**Fall 2020, Fridays 12-2pm**

**Location:** Virtual

**Instructor:** Dr. Audra Bardsley, pronouns: she/her

**Office:** Zoom meeting room, see Blackboard for details

**Office Hours:** M, 1-3 pm or by appointment

**Email:** aibardsl@usc.edu

### **Course Description/Rationale**

Plastics are perhaps the most remarkable innovation of the 20<sup>th</sup> century - strong, light, endlessly versatile, and incredibly durable. Today, plastics have come to feature prominently in almost every aspect of daily life. It is difficult to imagine going through the day without contacting some form of plastic. Only in the past few decades have we begun to understand the scope of consequences our plastic-centric life styles have on people, planet and ecosystems. This semester, we will examine many facets of plastic as an environmental issue including history, production, waste stream challenges, environmental fate, human/ecological health implications, relevant legislation and potential solutions.

### **Learning Objectives**

- Appreciate the historical context of our modern plastic dependent lifestyle
- Critically evaluate the human, ecological, and climate impacts of plastics from raw material extraction through production, use, and disposal
- Explore potential solutions and alternatives to traditional fossil fuel based plastics
- Learning objectives in this course are aligned with those of the Environmental Studies Program: <https://dornsife.usc.edu/environmental-studies/learning-objectives/>

### **Email/Course Communication Policy**

This course will use Blackboard for communication, information and turning in assignments. When applicable, seminar recordings will be made available after the synchronous virtual seminar session.

When reaching out by email, please put 'ENST 495' in the email title and a bit about the reason you are reaching out, e.g. 'assignment question' or 'reading guide #2'. I will do my best to respond to you within 24 hours. If you don't hear from me in 2 days, please send me a reminder email. I usually go by 'Dr. B' in my lower level classes, but for senior seminar you can use my first name 'Audra'.

*We are living in an unusual and often very stressful time. If you are experiencing particular life or academic challenges this semester, please email me. You don't need to share details if you don't*

*feel comfortable, but we can start a conversation and find solutions that will help you be as successful as possible this semester.*

### **Required Readings and Supplementary Materials**

All reading materials, videos or podcasts that I would like you to use for this seminar will be made available via Blackboard. There is no specific textbook that you will need to purchase.

### **Description of Assignments**

*These are brief descriptions of the major assignments we will be completing this semester. More details will be shared during seminar meetings and on Blackboard.*

#### ***Reading Guides***

Each week's materials will have a corresponding reading/activity guide that will be posted on Blackboard one week before it is due. Reading guides are due by the time we meet so that you are prepared to participate in seminar. Reading guides are intended to help prepare you for discussion during our meeting on Fridays. *All students are responsible for actively participating.*

#### ***At Home Plastics Survey***

Students will catalogue plastic packaging they use/their household uses in daily life. Before seminar students will identify and research their local waste hauler and see what portion of the plastic packaging would be accepted for recycling. They will also look into additional polymer characteristics and what type of item/quality of item it could be recycled into.

#### ***In Class Debate***

Students will be randomly assigned a position to debate and work in teams to develop an argument in favor of or against a particular plastics issue. In preparation, each student will produce a written summary sheet that outlines what will be covered during the oral presentation along with relevant references. The topic(s) and more details will be shared later in the semester.

#### ***Podcast Final Project***

For this assignment, students will work in pairs to develop a 5-10 minute podcast that explores a topic relevant to plastics beyond what we cover in seminar. This could mean exploring a topic we touched upon with greater depth or more specificity, or examining a plastics topic that we didn't have time to cover.

Teams will choose a topic mid-way through the semester, and meet with me to pitch the podcast idea and help flesh out the concept. Podcasts should be informative, creative, compelling and geared towards a general audience. More details will be shared later in the semester.

At the end of the semester we will have a listening party and discussion.

#### ***SCCWRP Microplastics Symposium***

Students will attend at least a portion of the October 7<sup>th</sup> SCCWRP Symposium on Health Issues Surrounding Microplastics. They will summarize and comment on talks they were able to attend.

#### **Additional Notes on Assignments**

Late assignments will automatically be docked 50%. After one week late, no credit will be given unless explicit permission has been given for extenuating circumstances. Late podcast and debate assignments won't be accepted.

## Exams

There will be two non-cummulative, take home exams this semester. Exam questions will be drawn from course readings, lecture materials, discussion, and outside activites. Questions may include multiple choice, computational, fill in the blank, short answer, and essay questions. ***No make-up exams will be allowed without explicit permission.*** During exams, students can consult course materials, but no outside information.

## Grading Breakdown

<u>Assignment</u>	<u>Points</u>	<u>% of Grade</u>
Midterm 1	50	24%
Midterm 2	50	24%
Home Plastic Survey	10	5%
Reading Guides (10 total)	40	20%
Class Debate	10	5%
Final Project	45	22%
<b>TOTAL</b>	<b>205</b>	<b>100%</b>

## Grading Scale

Course final grades will be determined using the following scale. Points earned will be divided by points possible, and result rounded to the nearest full percentage point.

A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

## Zoom Etiquette

We are all adjusting to the online learning environment. For me and maybe some of you this will be our first experience interacting in a virtual classroom. A few reminders for online lecture/discussion:

- PLEASE NOTE: synchronous session will be recorded and distrubted on Blackboard since we may be experiencing extenuating circumstances like living in different time zones or other challenges, however live attendance is always encouraged if possible especially for a seminar style class

- Sharing course materials outside the learning environment is prohibited under USC policy (*SCampus Section 11.12(B)*)
- Please mute your mic when not speaking
- Use of webcam is encouraged and preferred, just remember to be properly attired (I know someone who accidentally attended a work meeting shirtless during the summer heat, just saying...) and use backgrounds if you'd prefer some more privacy
- If you are unable to keep their camera on during a synchronous Zoom session, please contact me prior to the class session to discuss expectations and accommodations needed
- If you live with others, headphones with a mic might be helpful
- As long as you can focus, eating is totally fine – we may be coming from all different time zones/schedules
- Please do your best to focus on our class discussion, avoiding browsing social media/internet
- You can use the chat box or hand raising feature to ask questions during lecture or comment during discussion
- Come to synchronous meetings prepared
- We are all under extra pressure during this unusual time, please be thoughtful and respectful towards your classmates and me; more on that in the next section

### Classroom Groundrules

Below is a brief summary of ground rules and expectations for our classroom. You can find a more comprehensive version of this list on the Environmental Studies Program website.

- Share responsibility for including all voices in the conversation
- Listen respectfully
- Be open to changing your perspectives based on what you learn from others
- Understand that we are bound to make mistakes in this space
- Understand that your words have effects on others
- Take pair work or small group work seriously
- Understand that others will come to these discussions with different experiences from yours
- Make an effort to get to know other students
- Understand that there are different approaches to solving problem

### Course Schedule: A Weekly Breakdown

For the best learning experience, you are expected to have read assigned material and complete appropriate assignments or Blackboard participation modules by the date the topic is discussed in class. Article and supplemental readings will be posted online. ***The readings and schedule of topics may be adjusted throughout the semester depending on progress of the class.***

	Topics/Daily Activities	Readings	Deliverable/ Due Dates
<b>Week 1</b> Aug 21	Class intro & welcome Plastic perceptions A brief history of plastics		Pre-course reflection
<b>Week 2</b> Aug 28	Community impacts of fossil fuel extraction, petrochemical plants, plastic production	Propublica Cancer Alley articles, PRI Podcast, Johnston et al. 2020, CA Well Finder App	RG 1

	GUEST SPEAKER: Sierra Club, speaker TBD		
<b>Week 3</b> Sep 4	Ubiquity of & dependence on plastic products, potential health risks associated with plastic product consumption	<i>Plastic Waste &amp; Recycling</i> Ch20.3-20.4 (2020), Halden 2010, Shi et al 2019, Can medical care exist without plastic? (NatGeo), Can labs move away from single use plastic?	RG 2
<b>Week 4</b> Sep 11	Fate of plastics - managed waste: Landfill disposal, recycling, incineration  GUEST SPEAKER: Sean Finn, Republic Services	Geyer et al 2017, Brooks et al 2018, 2017 CA State of Disposal and Recycling, Should We Burn Plastic Waste?(NatGeo), Garbage Barge Video	RG 3 Home Plastic Audit Due
<b>Week 5</b> Sep 18	Fate of plastics - escape into the env't P1: Plastic debris on land & sea Estimates of annual flux  GUEST SPEAKER: Captain Charles Moore, Algalita	Jambeck et al 2015, NOAA Garbage Patch page, Beaumont et al. 2019, Malizia & Monmany-Garzia 2019, Plastics & Anthropocene (Science Daily), Vethaak & Leslie 2016	RG 4
<b>Week 6</b> Sep 25	<b>Take Home Exam, Midterm 1</b>		Choose Podcast Topic & Teams
<b>Week 7</b> Oct 2	Fate of plastics - escape into the env't P2: Microplastics sources, detection, emerging concerns  GUEST SPEAKER: Harry Allen, EPA	<i>Plastic Waste &amp; Recycling</i> Ch. 9 (2020), Abassi et al 2019, Excerpt of <i>Primary Microplastics in the Oceans</i> (IUCN), Mason et al. 2016	RG 5
<b>Week 8</b> Oct 9	Plastic life cycle analysis: impact on climate, comparison to alternatives	Plastics & Sustainability (ACC), Plastics & Climate: Hidden Cost of Plastic Planet, Shen et al. 2020	RG 6 Attend SCCWRP Microplastics Symposium 10/7
<b>Week 9</b> Oct 16	Potential solutions P1: Biobased plastics Sustainable option? Greenwashing?	<i>Plastic Waste &amp; Recycling</i> Ch. 4-5 (2020), Dilkes-Hoffman (2019), Emadian et al. (2017)	RG 7
<b>Week 10</b> Oct 23	Potential solutions P2: Closed loop plastic recycling Intercepting marine plastics Application to design & 'upcycling'  GUEST SPEAKER: Jason Farahnik, CarbonLITE	<i>Plastic Waste &amp; Recycling</i> Ch. 18-19 (2020), Handbag collection using ocean-bound plastic (dezeen) Recycled Plastic in Design is B*****t (dezeen),	RG 8
<b>Week 11</b> Oct 30	Potential solutions P3: Advanced 'Chemical' Recycling Building better polymers Enzymatic/microbial/bio-breakdown	Video: Nature has learnt how to eat our plastic, Yoshida et al. 2016, Yang et al. 2020, <i>Plastic Waste</i>	RG 9 DEBATE

	GUEST SPEAKER: Unconfirmed	& Recycling Ch. 13 (2020), McGeehan Lab article	
<b>Week 12</b> Nov 6	Potential solutions P4: Plastic Bans, zero waste initiatives & other policy approaches  GUEST SPEAKERS: Nichelle Mitchell-Huizar & Gina Whisenant	Plastic Waste & Recycling Ch. 16 (2020), Zaman et al. 2015, TBD	RG 10
<b>Week 13</b> Nov 13	Final Podcast Project Listen Party, Discussion		
<b>Week 14</b> Nov 17	<b>Take Home Exam, Midterm 2</b>		

## Statement on Academic Conduct and Support Systems

### Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” [policy.usc.edu/scampus-part-b](http://policy.usc.edu/scampus-part-b). Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code (*SCampus Section 11.12(B)*). This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (See Section C.1 Class Notes Policy).

### Support Systems

*Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. [engemannshc.usc.edu/counseling](http://engemannshc.usc.edu/counseling)

*National Suicide Prevention Lifeline – 1 (800) 273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. [www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org)

*Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. [engemannshc.usc.edu/rsvp](http://engemannshc.usc.edu/rsvp)

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: [sarc.usc.edu](http://sarc.usc.edu)

*Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class. [equity.usc.edu](http://equity.usc.edu)

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. [studentaffairs.usc.edu/bias-assessment-response-support](http://studentaffairs.usc.edu/bias-assessment-response-support)

*The Office of Disability Services and Programs*

Provides certification for students with disabilities and helps arrange relevant accommodations. [dsp.usc.edu](http://dsp.usc.edu)

*Student Support and Advocacy – (213) 821-4710*

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. [studentaffairs.usc.edu/ssa](http://studentaffairs.usc.edu/ssa)

*Diversity at USC*

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. [diversity.usc.edu](http://diversity.usc.edu)

*USC Emergency Information*

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. [emergency.usc.edu](http://emergency.usc.edu)

*USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.*

Provides overall safety to USC community. [dps.usc.edu](http://dps.usc.edu)