

CUNY-NYC College of Technology
Department of Business, Business & Technology of Fashion

Course Outline: Future Fashion and Textiles (BUF 4246)

3 credits/4 hours (2 hours lecture/2 hours lab)

COURSE DESCRIPTION

An investigation of topics related to technological developments in the industry, specific to textiles and apparel. Topics such as conductive textiles and interactive garments are explored in conjunction with uses in the apparel industry. Research, discussion and lab-based experimentation culminate in a final project, paper and presentation.

COURSE CO/PREREQUISITE (S) Textile Technologies (BUF 3346) or by departmental permission

REQUIRED TEXTBOOK AND MATERIALS

Genova, Aneta and Katherine Moriwaki. *Fashion and Technology*. Bloomsbury, 2016: London and New York. **ISBN-13:** 978-1501305085

OERs as listed in the course Open Lab site: these will include current articles and open source textbook readings as listed.

Online Video tutorials will be a significant part of the lab portion of this course, e.g. Adafruit Tutorials <http://learn.adafruit.com>

Materials: Digital components, fabrics and mixed media as needed for projects
Materials cost: ~\$100

LEARNING OUTCOMES: Course Specific

OUTCOME	ASSESSMENT
Identify current trends in the apparel industry with regard to smart/interactive textiles, biosynthetic fiber development, and new garment forms	Class discussions, homework and final paper
Research and understand the role of technology in the contemporary textile and apparel industries	Class discussions, homework, lab work, and presentation of final project
Analyze challenges presented by non-traditional textile and garment-making techniques, and consider solutions or alternatives	Class discussion, online assessments of industry trends, lab work, sample production and projects
Understand the relationship between electronic components and textiles/apparel	Class discussion, lab work, and final paper/presentation
Interpret the current trends, techniques, and future direction of the industry, and create original response	Class discussions, lab work and final paper/presentation

LEARNING OUTCOMES: General Education

OUTCOME	ASSESSMENT
Employ scientific reasoning and logical thinking	Lab experiments and documentation
Derive meaning from experiential learning as well as gather information from observation	Class discussions, lab experiments, and final project materials
Show curiosity and the desire to experiment with software to alter the results of textiles/apparel	Class discussion, samples produced, and final project materials
Gather, interpret, evaluate, and apply information discerningly from a variety of sources.	Lab experiments, library research, homework assignments
Demonstrate intellectual honesty and personal responsibility	Online discussions, written demeanor, final paper & presentations
Gather, interpret, evaluate, and apply information discerningly from a variety of sources	Final paper & presentation
Demonstrate expanded cultural and global awareness and sensitivity	Class discussion, final paper & presentation

TECHNOLOGY

All students will be responsible for arranging reliable access to internet and computer for online assignments including submissions, discussion boards, blogs, and related materials. Primary platforms used will be Blackboard and Open Lab; any online synchronous meetings will take place using Blackboard Collaborate or Zoom.

ACCOMMODATIONS STATEMENT

City Tech is committed to supporting the educational goals of enrolled students with disabilities in the areas of enrollment, academic advisement, tutoring, assistive technologies and testing accommodations. If you have or think you may have a disability, you may be eligible for reasonable accommodations or academic adjustments as provided under applicable federal, state and city laws. You may also request services for temporary conditions or medical issues under certain circumstances. If you have questions about your eligibility or would like to seek accommodation services or academic adjustments, please contact:

Center for Student Accessibility at 300 Jay Street room L-237

Telephone: (718) 260-5143 WEB: <http://www.citytech.cuny.edu/accessibility/>

Students who miss a scheduled presentation or exam due to illness or medically-related emergencies will be referred to the Center for Student Accessibility. The CSA will review any documentation requested and give the student a letter to share with the relevant instructor if accommodations need to be made.

ATRIUM LEARNING CENTER

The Atrium Learning Center at City Tech offers academic assistance to all students through the use of services including tutoring, workshops and access to computer-based programs. Both peer and faculty tutors are available for assistance. For further information, please visit:

<https://www.citytech.cuny.edu/alc/>

NYCCT ACADEMIC INTEGRITY POLICY

Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion.

SafeAssign anti-plagiarism software may be administered for the submission of assignments; students will have the opportunity to review their reports prior to submission.

STUDENT CONDUCT POLICY

Any conduct that interferes with the educational process is prohibited in classes at NYCCT. This includes any behaviors that are dangerous, disruptive, disrespectful or disorderly. Students must use commonly accepted standards of courtesy, cooperation, consideration and mutual respect at all times.

CREDIT HOUR ASSIGNMENT POLICY

Course work performed outside of the classroom (such as reading, studying, writing papers, completing projects or receiving tutoring) is critical to academic success. While the time requirements for individual students may vary somewhat, a general rule of thumb is that students should spend about **two hours outside the classroom for every hour required in it**. Assigned homework such as creating original fabric samples, researching methods, and becoming familiar with materials and lab equipment, is expected to take up to 6-8 hours weekly. Please plan accordingly.

MIDTERM REPORTS: All students will be notified through their CUNY- NYC College of Technology e-mail accounts and/or posted on Blackboard about their progress in this course by the mid-semester point.

Mid-term grades are assessed as follows, per recommendation by the Office of the Provost:

P-Passing, BL-Borderline, U-Unsatisfactory, SA-Stopped Attending

Grading System: All grades will be based in proportion to the following scale:

A = 93 - 100 A- = 90 - 92 B+ = 87 - 89 B = 83 - 86 B- = 80 - 82 C+ = 77 - 79 C = 70 - 76 D = 60 - 69 F = 59 and below. If a final grade is not a whole number, any decimal greater than .5 will be rounded up (e.g. 82.51 becomes an 83). Each assignment includes a clear rubric.

WU-Unofficial Withdrawal (attended at least once)

WF-Withdrew Failing

WN-Unofficial Withdrawal (never attended)

Grading and add/drop policies are in accordance with University policies.

FINAL GRADE FOR THE COURSE

The Course grade is calculated as follows. Descriptions for each category are included in the following pages:

CATEGORY	DESCRIPTION	% FINAL GRADE
In-class and online Participation	Class Discussions and Peer Reviews	(10%)
Online Participation	Discussion Boards and Blogs	(10%)
Module 1	Fair Trade/Ethics in Fashion	(15%)
Module 2	Sustainable Alternatives	(15%)
Module 3	Smart Textiles & Technology in Fashion	(15%)
Final Project	Create an apparel collection or product based on the Modules studied, including samples	(25%)
Final e-Portfolio	e-Portfolio on Open Lab showcasing best work, including final project	(10%)

PARTICIPATION Active participation includes taking notes during lecture and participating in classroom discussions, peer critiques, and labs. Online participation includes participation in discussion boards or commenting on peer web sites/blogs. Please check Blackboard regularly for updates to assignments and postings. All changes to the schedule will be posted in the Announcements section; emails will also be sent for urgent items.

Although students are not graded on attendance, missed time impacts any portion of the final grade overtly allocated to participation and/or any grades awarded for activities that relate to presence in class (e.g. discussions, lectures, or labs). In-class activities including quizzes and tests that are completed during class time will result in a 0, unless the absence is excused. Missed class time includes not just absences but also late arrivals, early departures, and time outside the classroom taken by students during class meeting periods.

Students who are not present in class are responsible for turning in assignments *before* the start of class on the due date via Blackboard. Exceptions will only be made for medical or family emergencies provided on official letterhead, as approved and documented through the Center for Student Accessibility (see previous section).

Please silence your cell phones When in class, please turn your cell phones off and put them out of sight. Talking on cell phones, checking or sending text messages, listening to music, and reading material not connected to this class is prohibited. Please do not wear headphones during class. Laptops are permissible for taking notes in the first row of the classroom. No video or audio recording permitted during lectures. If you need to check your cell phone for an emergency situation, please inform me before class.

Online participation: For any online portion of this course, attendance is documented by your participation online in discussion boards, blogs, and participation during synchronous sessions using chat or audio. All due dates for online work, including time of day, are noted on the course schedule. All submitted assignments are time/date stamped through Blackboard.

LECTURES and LABS This course includes a lecture component as well as a lab component. Lectures and labs will take place during the in-person portion of the class. In some cases, students will be responsible for bringing materials to complete the lab, and will be notified ahead of time on the syllabus, in class, and through reminders announced on Blackboard. Labs are assessed and calculated as explained below. The weight of each Module is based on the amount of time involved in the lab. Open lab hours will vary each semester and per Module; please check Blackboard for updates.

LAB MODULES: Module 1 will focus on ethical production processes, and will culminate in a short student presentation for the peer critique portion. Module 2 (Sustainable alternatives) and Module 3 (Smart/Techno Textiles) include lab work to produce samples; mood boards will be created for peer critiques. Being present for demonstrations and lab work is an important aspect of learning these techniques, and as such, is included in your participation grade. The fabric samples completed during labs and outside of class comprise your Module grade.

Module 1: Ethics and Fair Trade in Fashion Students will research Fair Trade companies and present to the class on a company of their choice from a list provided. The analysis will include pros and cons of global outsourcing, including environmental issues, as well as the economic viability of reorganizing apparel industry practices towards more ethical practices. This unit is worth 15% of the course grade calculated.

Module 2: Sustainable Alternatives Students will research companies creating sustainable fiber alternatives and environmentally-friendly processes, and create samples based on one of these processes. This unit is worth 15% of the course grade.

Module 3: Smart Textiles & Technology in Fashion Students will research fashion designers and companies using technology to create interactive textiles and garments, and create samples based on one of these processes. This unit is worth 15% of the course grade calculated.

Final Project: Students will create an apparel collection or product based on the Modules studied, including samples, e.g.: Creating an interactive textile for apparel, and presenting this with supporting research, marketing plan, consumer demographic, price point for the finished product, and plans for upscaling.

All lab samples are expected to be executed at least partly during class time. This allows for in-progress assessments and a better result for student output. Module samples should be turned in on time and complete. Partial work will be reflected in the grade for the assignment. Late work is only accepted on an individual basis upon the approval of the instructor. If you have questions or issues with the lab, or if you will be missing a lecture or lab, you are responsible for contacting the instructor during office hours, or via email 4-5 hours before the start of class for assistance. This includes online assignments, such as discussion board questions. Students need to submit assignments *on or before the due date*.

ONLINE PORTFOLIO Each student is responsible for creating a web-based portfolio showcasing their work. This can be added to your existing online portfolio. Completion of the e-Portfolio is 10% of your final grade. Students will have the option of using Open Lab to post their portfolio and/or create a web site to promote their work. Alternative web-based platforms will also be discussed at the beginning of each semester. *See next section for more on e-Portfolios.*

E-PORTFOLIOS/OPEN LAB:

We will be creating online portfolios for the work created in this course. CUNY-College of Technology asks all students to participate in building a program-long ePortfolio of the work that they complete while taking classes at the College. Through a process of *collect, select, reflect, and connect*, students learn to judge the quality of their own work, speak about their learning, and present evidence of their current knowledge and skills. College faculty will assist with this process by recommending that you store at least one significant piece of work from each course in your Blackboard content collection. For more information, see the "**ePortfolios at CUNY-College Technology**" organization in Blackboard.

For sample Open Lab portfolios, see: <https://openlab.citytech.cuny.edu/portfolios/>

COURSE SCHEDULE

Week/ Topic	Lecture/Lab	Assigned Reading & Homework
WEEK 1: Module 1: Introduction to Ethics/Fair trade in Apparel	Lecture: Introduction to Global practices in Fashion: history of sweatshops; Discussion of Fair Trade Lab: Group work: Analyze manufacturing practices in a case study	READ: Mod 1, Week 1: Sweatshop & Labor history Discussion Board topic example: “Wage Theft Plagues L.A. Garment Workers...” in the L.A. Times (Aug. 17, 2020) HW: Post your thread and reply to 2 peer posts
WEEK 2: Fair Trade Practices in Fashion	Lecture: Discussion of how the industry is changing Lab: Presentation of ethical trade example from list	READ: Mod 1, Week 2: Labor laws & corporate responsibility HW: Comment on at least 2 peer postings
WEEK 3: Ethics and Sustainability	Lecture: Sustainability issues and environmental impact Lab: Group work: Analyze industry solutions using case studies	HW: Write your essay on sweatshop practices and CSR in fashion
WEEK 4: Module 2: Sustainable alternatives in Fashion Review articles, choose blog topic	Lecture: Introduction to synthetic textile production Lab: Fabric tests with natural v. synthetic fabrics	READ Mod 2, Week 4: Intro to Sustainable Fashion article and REVIEW The Good Trade BLOG: Choose one company from and blog about their sustainable business model on Open Lab
WEEK 5: Biosynthetic production- Dyes	Lecture: Sustainable dye processes Lab: Create samples using biodegradable dyes	REVIEW: Module 2, Week 6: Take notes on materials and techniques used in sustainable dye and textile production
WEEK 6: Biosynthetic production- Fabrics	Lecture: Biosynthetic textile production Lab: Examine and compare different biosynthetic textile samples	REVIEW: web sites listed in Module 2, Week 7 Take notes on materials and techniques used in sustainable dye and textile production
Week/ Topic	Lecture/Lab	Assigned Reading & Homework
WEEK 7: 10/6-10/13 Biosynthetic production- Fabrics	Lecture: Use of biosynthetic fabrics in the apparel industry	HW: Write a paper analyzing two different types of biosynthetic textile production or dye processes

WEEK 8: Biosynthetics in the industry	Lab: Design a sustainable product (Garment or accessory)	Complete sustainable product and prepare for presentation
WEEK 9:	Presentations	REVIEW: Mod 3, Week 10: Introduction to Smart Textiles
WEEK 10: Module 3: Intro to Smart Textiles and Future Fashion	Lecture: Introduction to Smart textiles Lab: Creating a circuit for a Smart textile	READ: Fashion & Technology, Ch. 1 HW: Analyze types of e-textiles (passive v. active/smart) using examples from Module 3
WEEK 11: Interactive surfaces	Lecture: Interactive surfaces and uses in apparel Lab: Working with sensors	READ: Fashion & Technology Ch. 2 REVIEW: Mod 3, Week 11: Fashion Designers using technology
WEEK 12: Smart Garments in practice	Lecture: Fashion Designers using technology Lab: Group discussion: Talk about how Smart textiles can improve or degrade quality of life for users	Complete samples of smart textiles for presentations
WEEK 13: Final Module begins	Presentation of Smart Textile samples; brainstorming for final project	HW: Develop and Submit Idea for final project, with timeline
WEEK 14:	Lecture: How to create a collection and pitch an idea to investors Lab: Independent lab work	HW: Put together the components for your collection Put together your PowerPoint presentation for investors
WEEK 15:	Lab: Presentations and peer reviews	HW: Complete final project materials and update e-portfolio
WEEK 16: FINALS	Final materials due	

Bibliography

Banzo, Massimo and Michael Shiloh. *Getting started with Arduino*. Maker Media, 2014: Sebastopol.

Barela, Mike. *Getting Started with Adafruit Circuit Playground Express (1st edition)*. Maker Media, 2018: San Francisco.

Brownie, Barbara. *Spacewear: Weightlessness and the Final Frontier of Fashion*. Bloomsbury Visual Arts, 2019: London and New York. **ISBN-13:** 978-1350000322

Clarke, Sarah E. Braddock and Jane Harris. *Digital Visions for Fashion and Textiles: Made in Code*. Thames & Hudson, 2012: New York. **ISBN-13:** 978-0500516447

Fletcher, Kate and Lynda Grose. *Fashion & Sustainability: Design for Change*. Laurence King Publishing, 2012: London. **ISBN-13:** 978-1856697545

Gullingsrud, Annie. *Fashion Fibers: Designing for Sustainability*. Fairchild Books, 2017: London and New York. **ISBN-13:** 978-1501306648

Hartman, Kate. *Make: Wearable Electronics: Design, Prototype and Make your own interactive Garments*. Make Community, LLC, 2014. **ISBN-13:** 978-1449336516

Jiminez, Guillermo C. and Elizabeth Pulos. *Good Corporation, Bad Corporation: Corporate Social Responsibility in the Global Economy*. Open SUNY: 2016. ISBN 13: 9781942341253

Pailes-Friedman, Rebecca. *Smart Textiles for Designers: Inventing the Future of Fabrics*. Laurence King, 2016: London. **ISBN-13:** 978-1780677323.

Torvalds, Mark. *Arduino: A Step-by-Step Guide to Master Arduino Hardware and Software*. CreateSpace Independent Publishing Platform. **ISBN-13:** 978-1976097713