

# PRINT + PACK

## News

### CLEMSON'S NEW 3D PRINTING COURSE FOR GRAPHIC COMM STUDENTS

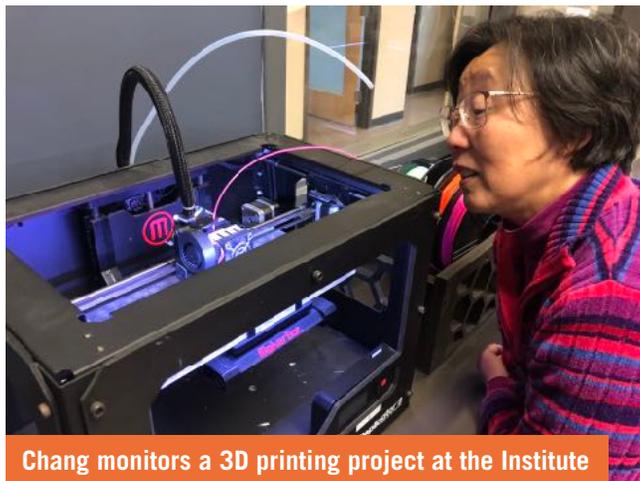
In its first semester at Clemson University and hosted at the Sonoco Institute, “3D Printing Workflow” (GC 4900 for undergraduate students and GC 6900 for graduate students) is being taught by new Graphic Communications (GC) faculty member, Shu Chang. Chang recently transferred from the Rochester Institute of Technology (RIT) where she taught a similar course for students there.

“It was very popular,” said Chang. “I would typically have 50% over the class limit register, resulting in around 19-20 students. Usually the class was signed up for very, very quickly.” Ideally, Clemson’s course will host 12-14 students though only five are taking the first course this semester. Of the five students, four are graduate students and one is an undergraduate.

“The class is designed in such a way that we have a lecture section and a lab section,” continued Chang. “The lecture section is designed to have three parts that cover different topics in the 3D printing workflow.”

Chang does not like exams, because she believes students spend too much time memorizing things that they quickly forget. “So, I usually do quick, little quizzes,” she mentioned. “The quizzes have questions based on the lecture from the week before. The majority of students pass and then we talk about it in the class right then.” Chang will invite industry leaders to lecture periodically.

Another part of the class she calls *Question of the Week*. “There are two elements to it. First, every student has to submit a question about 3D printing. It can be something completely crazy. I get questions about legal issues, who invented 3D printing and things like that. It’s a very nice way to keep everybody updated, because they bring up things you don’t usually think of. Then, if the class is very big, I split them into teams. Or, if it’s very small, I pick an individual student and ask them to pick one of the questions to answer at the next class. It doesn’t have to be fancy, just five or six slides with the answer and where they are getting the information from.”



Chang monitors a 3D printing project at the Institute

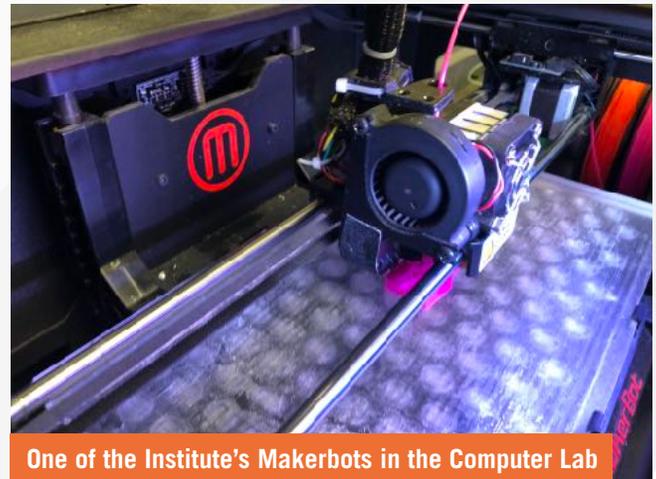
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The lecture section is followed by a lab section which involves learning a 3D design software, how to design for 3D print and 3D printing itself, every week at the Sonoco Institute. Weekly printing projects start simple and advance as the class progresses.

“The class workflow is very similar to traditional printing. You have an idea or concept which you design, then the design file has to be prepared to go through some special software to create a two-dimensional digital file. Then you go into the building process, and there are many, many different types of 3D technologies, so each process is different. The build process, the removal process and the finishing process will all be different, so we go through that in the class.” Chang compares putting down each layer of material to an Etch A Sketch drawing.

Students are shown different ways to collect or design input files, which become more complex throughout the class, and how to work through printing issues. The first project they print is a type block, followed by a business card.

“Our next project is going to be a toy truck in four different parts - two wheels, one body and one truck bed,” said Chang. “Students learn to assemble it in parts in the software and then print it as a whole. So, one of the advantages of 3D printing is that you can minimize the steps needed for assembly. If you’re making a toy that’s traditionally assembled in four parts, now it can just print in one piece.”



One of the Institute's Makerbots in the Computer Lab

Eventually the students in this class will move on to sculpturing and 3D color printing with the help of new equipment slated to arrive this semester. Chang notes that with 3D printing, printed objects can appear in their more natural forms rather than just primitive shapes.

“The last three or four weeks of the class I typically leave open, so students can produce a project of their own from start to finish and problem-solve themselves. At this point, the five students have decided to make five buildings from campus and assemble them as a team.”

Since the class is contained within Clemson’s Graphic Communications department for now, students start with prior knowledge of the design process. This means that Chang can teach more complex subjects, though content will still vary in future classes depending on the skill levels of students. Chang also plans to incorporate more packaging elements to align with the Sonoco Institute’s mission.

“There’s a lot of flexibility with this content and who might be interested,” said Chang. “In Rochester, I also taught these projects at a high school with a Graphic Arts program. Maybe, eventually, we will print on paper and incorporate 3D printing directly onto the packaging substrate. I would also like to incorporate more interactive elements into the projects.”

Chang said in closing, “The printing and packaging industry doesn’t fully know how to use 3D printing, I think. Engineers know how to use it, but the graphics industry is still learning.”

Follow Clemson’s [Graphic Communications department online](#) to stay updated on the course.

## MEET OUR NEW STUDENT PRESSROOM ASSISTANTS

The start of the spring semester ushered in a new wave of student talent to the Sonoco Institute's Advanced Print Lab. Meet a couple of the new faces you can expect to see around the press!



**Jake Putnam, Sophomore**  
Major: Graphic Communications  
Minor: Packaging Science



**Megan McGrory, Senior**  
Major: Graphic Communications  
Minor: Business Administration

*Why did you choose to work at the Sonoco Institute?*

**JP:** I wanted to get a job at Sonoco Institute because it offered a chance to combine my major and minor into one. I also wanted to gain access to industry leaders coming in weekly to see what new products they were testing, including substrates and inks, and I wanted to learn to operate a press at this size.

**MG:** A lot of my internships have been in the flexo industry, so I figured it would be good to experience press operation hands-on and see the ins and outs of the whole flexo process.

*What are your career goals?*

**JP:** I would like to consult for consumer packaging, with a mix of design and sales responsibilities. I enjoy living in the South, but might like to travel. Last semester I took a conceptual packaging class where we designed our package artwork as well as the product in ArtiosCAD and combined the two, which I really enjoyed. I'm a creative person interested in branding, conceptual packaging and graphics. Packaging means more to me than just a box.

**MG:** Right now I'm still deciding and remaining flexible. I have loved all of my internships, and they were all very different, so I want to see what opportunities arise. I just really like the hands-on aspect of the GC major and this industry, because you always have the capability to learn new things.

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*Why did you choose the Graphic Communications major?*

**JP:** I was originally in pre-business, planning on studying Marketing. I transferred to GC the second semester of my Freshman year, because I decided that I enjoyed the branding and creative process, but also wanted a technical skill. One of my brothers is a graphic designer and the other is an engineer - I see this major as a combination of both.

**MG:** I had started in Packaging Science thinking I wanted to do packaging design, but realized the science aspect wasn't for me. So, I ended up in GC and have loved it ever since I took my first class!

*What internships have you completed?*

**JP:** In Philly, where I'm from, I was a Product Development Intern for Dietz & Watson where I worked every day with packaging vendors. Through that opportunity I was given offers from those vendors, because they saw how passionate I was for D&W, so I might go back to intern again in Philly.

**MG:** I have done a lot of different internships in the flexo industry. First, I worked at ID Technology in Marietta, GA where I worked in prepress, platemaking and customer service. Then, I interned in the Graphic Services department at WestRock, also in GA, where I did a lot of QC and color management. Finally, I worked at Sealed Air Corporation in Simpsonville, SC as a Graphic Accounts Manager.

*What classes are you taking this semester?*

**JP:** Right now I'm taking GC 2070 (Graphic Communications II) and GC 3400 (Digital Imaging and eMedia).

**MG:** This semester I'm taking my Senior GC classes and one elective. In my *Current Developments and Trends in Graphic Communications* course, I'm working on a research project to see if people connect album artwork to artists the same way they connect logos to brands. I just submitted my proposal.

*What do you like to do for fun?*

**JP:** I like being outdoors - fishing, sports and hanging with friends!

**MG:** I enjoy listening to music and hanging out with my friends. I'm also a member of Sigma Kappa, which I've loved. I'm the graphic designer for CMAedu (Clemson's Country Music Awards chapter) where I design posters for people to win concert tickets or meet-and-greets with country music artists. The CMAedu foundations raises money to raise awareness for the positive impact music has in schools.



Poster artwork designed by McGrory

# UPCOMING INDUSTRY TRAINING COURSES

Click the events below for details or visit [www.SonocoInstitute.com/Events](http://www.SonocoInstitute.com/Events) for the full calendar!

## INTRODUCTORY COURSES

CORRUGATED PACKAGING SEMINAR  
[June 5-6, 2019](#)

FLEXO FOUNDATIONS SEMINAR  
[August 13-14, 2019](#)

## INTERMEDIATE COURSES

INTRO TO PREPRESS WORKSHOP  
[April 30 - May 2, 2019](#)

INTRO TO FLEXO WORKSHOP  
[June 4-7, 2019](#)

## SPECIALTY COURSES

EXPANDED COLOR GAMUT SEMINAR  
[April 9-11, 2019](#)

## PARTNER EVENTS

X-RITE FUNDAMENTALS OF COLOR APPEARANCE AND QUALITY CONTROL  
[March 4-5, 2019](#)

X-RITE FUNDAMENTALS OF COLOR APPEARANCE AND QUALITY CONTROL  
[March 6-7, 2019](#)

AICC FLEXOGRAPHIC PRINTING: RAISING THE STANDARD  
[May 22-23, 2019](#)

## IN THE NEWS

**Phoseon Technology donates UV LED curing system to the Sonoco Institute's Advanced Print Lab**

**SGIA partners with Clemson's Sonoco Institute on color management certification**

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