| Mary Loader: | Welcome to Course Stories, produced by the Instructional design and new media team of EdPlus at Arizona State University. In this podcast, we tell an array of course design stories alongside other ASU online designers and faculty. On today's course story: |
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| Eric Stribling: | So, conceptually, we did want a different type of engineering course. We didn't want the same old, heavily mathematical, very divorced from practice, maker's course that we would normally see in a university setting. At the same time, we wanted it to be accessible to a large number of people. So we designed it for teaching it online. So, actually it started off being designed with a large number of competencies and also we're dealing with some engineering, design thinking, social implications of technology, teamwork, all of this packed together in the same course and available completely asynchronously at people's convenience in their home. |
| Mary Loader: | Hi, I'm Mary Loader, an instructional designer from ASU Online. |
| Ricardo Leon: | I'm Ricardo Leon. I'm a media specialist at the same place. |
| Mary Loader: | Yeah, we work together. |
| Ricardo Leon: | Let's get on with the show. |
| Mary Loader: | Okay. |
| Ricardo Leon: | Okay, We are recording. So, I'm going to have to get quiet like you and you're going to have to get loud like me. |
| Mary Loader: | I'm going to try. Sorry, I just had a bunch of fish too. This will be a lot of fun for you. We are at the Vine, near, well, I guess on the ASU campus. |
| Ricardo Leon: | It's adjacent. |
| Mary Loader: | Yeah, it's adjacent. I feel like it's on campus, isn't it? If you looked at a map, is this actually campus? |
| Ricardo Leon: | Good question. Oh, I'm very loud, so I have to get softer. So, good question. I think that there are dorms in the vicinity, so that probably counts. |
| Mary Loader: | We are celebrating at the Vine. That's why we're here. Having a beer. |
| Ricardo Leon: | Happy hour. |
| Mary Loader: | Yes. Here. Glass clink. There it is. |
| Ricardo Leon: | So Mary, this is the last episode of season one, this is a time for celebration. We're going to be taking a little bit of a break, but we'll have some things |

coming out for you during the summer, more course stories. We haven't said the name of the podcast yet.

All right, people. So, go ahead and make sure that you're subscribed and liking us and keeping track of what we got going on. We got a whole lot of stuff over the summer that we're going to be sharing out to you, and then a whole new season coming out in the fall. So, we want to say thank you, and if we see you out in the world, in the conference world, make sure that you say hi to us. We'll give you some swag.

Mary Loader:          Yes, we're going to get stickers and buttons and stuff. That's going to be so fun.

Ricardo Leon:         I'm looking forward to it. All right, So, you're not going to hear very much from us in this episode because we're actually in the interview, but we decided just to include ourselves. So, this is it. Goodbye.

Mary Loader:          Bye. We'll see you next season. And after this episode, make sure you go back and listen to all the other episodes. Be a super fan, get your badge in an NFT form. Is that? We haven't made that yet.

Ricardo Leon:         No. Bye.

Diana Redasavik...:   Hi, I'm Diana Redasavikovic. I'm a senior instructional designer with EdPlus, and the designer that partnered with Eric through the Technological Leadership Program. With me today is Eric Stribling and Matt Robinson. Eric, would you like to introduce yourself?

Eric Stribling:       Hi, my name is Eric Stribling. I am an instructional professional with ASU's Interplanetary Initiative where I teach a making course that we are going to talk about today. Prior to coming to ASU, I taught mechanical engineering at l'Université des Montagnes in Bangangté, Cameroun.

Diana Redasavik...:   Thank you. And Matt?

Matthew Robinso...:   Hi, I'm Matthew Robinson. I'm the manager of the new media team here at EdPlus.

Ricardo Leon:         Someone who's been on the show before. Return visitor.

Matthew Robinso...:   Return guest.

Ricardo Leon:         And of course, listener, you know Mary and I.

Mary Loader:          We're here. Here we are.

Diana Redasavik...:   Excellent. Well, thank you. Eric, it's so great to have you here with us to talk about your course story. What I find unique about your course is that it is hands

on and project based and a course that students take several times during the course of the technological leadership major. Even though it's not an engineering course, you teach making skills like 3D printing, mechanical thought, electronics, computer programming, and engineer design thinking. This is no small feat, especially when you take into account the number of hours spent in the studio with our media team to develop your lectures and lab instruction videos. Not to mention the short timeline you had to develop the course, which I believe was about three months.

Eric Stribling:       Oh yeah.

Diana Redasavik...:   Not quite sure.

Eric Stribling:       Something like that.

Diana Redasavik...:   So Eric, will you please share with us what your course is about and tell us what excites you about it?

Eric Stribling:       Yeah, so I really like my course. Because as you said, it's hands on. It's not an engineering course, but I believe it does cover a lot of the same ground. The goal of the technological leadership degree is to sort of train up, could we call them technologists, makers, who can make new technologies in the way that technology gets developed today.

                      So today, you're not going to have a single inventor locked away in his closet, tinkering away. Most likely, makers, technologists today are going to be working in large teams, communicating heavily, dealing with a lot of the social impacts of their technologies, and we try to replicate that. So, in this maker's course, we do start with hands on learning. We get students in the lab. The first time that we ran this course, we shipped off 3D printers and electronics kits and soldering stations to students around the country and we worked through practical examples, hands on, and with the help of this studio, we were able to really show students how to make stuff at the very beginning of this course. So, I think it's cool. I don't think anyone else is teaching making in this way anywhere else in the country.

Diana Redasavik...:   Excellent. And so what do you hope students will take away from this course?

Eric Stribling:       I want students to feel at home making.

Ricardo Leon:        And they're literally at home making these things.

Eric Stribling:       Well, I guess they are at home.

Diana Redasavik...:   Good start.

Eric Stribling:       That was clever.

Ricardo Leon:      Thank you, Eric.

Eric Stribling:      Well, yes, I do want people to be at home, at home, making new technologies, and I want them to feel comfortable. In a lot of engineering courses, you really start with basic science and calculus, and by the time you've actually touched a physical object, you're possibly in your third year and I just don't think that that is very conducive for learning.

Diana Redasavik...:      So Eric, one of the primary goals of this course is to help students develop proficiency in both making and designing, as you said. So, could you explain it a little more to us? Can you tell us a little more about what is meant by making and designing?

Eric Stribling:      The end goal ... This is a major, very heavily associated with the Interplanetary Initiative, and therefore it's very associated with making technologies for space, designing something for the context of deployment outside of the earth. So, the technologies that are implicated very much are 3D printing, very robust, small electronics that can withstand heavy vibrations, You have a lot of, for example, satellites that have to deploy out. So, thinking through how we can manufacture compactly with the idea that this is going to get larger once it reaches the outer atmosphere. But these technologies that we are using, they're very specific for this particular-

Ricardo Leon:      Mission.

Eric Stribling:      Mission, yeah.

Diana Redasavik...:      No, it's all about the mission. I've heard Katie Coleman say that a lot.

Eric Stribling:      It is all about the mission.

Diana Redasavik...:      It is. It's all about the mission.

Eric Stribling:      Yes.

Diana Redasavik...:      Yeah. So, this course is new to the Technological Leadership Program for both the online and on ground program. What was your experience developing this course? I know we began with a course development worksheet, you can also call it a course planning map, where you really began to conceptualize the course and break it down into modules. But then on your own, I recall you creating a different spreadsheet just for the lecture. So, how did you decide what lectures you were going to need, what materials you were going to use for this course?

Eric Stribling:      Yeah, so I think a maker's course was always a part of the technological leadership degree, but this particular course took a lot of actual internal work before we actually even planned what we were going to teach. So, there were a

lot of internal conversations with members of the interplanetary initiative, people who are involved on various NASA teams, deploying small satellite systems out.

And it was just like, "What do the people who are involved with making technology today, what are their skill sets? What can we teach makers that are not being taught right now?" So, we ended up with a couple of core competencies. Half of the course is technical, so we have mechanical, electrical, computer programming competencies. But on the other side we have design thinking, the social implications of technology, how to work with a team, how to break out a very complex project into smaller pieces and have people work together and have systems interlocking. So, this course is actually based around the competencies that grew out of those conversations.

Ricardo Leon:      I have a question for the instructional designers here. Is this a typical thing to have this many cooks in the kitchen when it comes to developing a course? It sounds like you had a whole team that was working on developing the course. There was different levels that you had to ... What's the word? When you're-

Mary Loader:      Consult with at the interplanetary initiative, like Lindy and all those folks.

Eric Stribling:      Yeah, so the whole technological leadership degree is an attempt to have people who are involved with the making of technology that think differently. So, the major itself couples this technical making course with a lot of other competencies. I know students have to take a psychology course, they have to take an open inquiry, how to deal with questions that don't have a correct answer or questions where there's a lot of unknowns. How do you even start tackling that type of a problem? And that's a course, actually, that Lindy teaches currently as a part of our degree program. And this course essentially tries to follow that same philosophy. So, we do have our own of inquiry cycle that's a part of the engineering design paradigm used for this course.

Mary Loader:      I love exploratory learning and that is so what this degree program is about, is exploration and learning through exploration. Really cool approach. I can say that it's unique. Not all of our programs are that way, are built that way, but they're all very intentional. All of our programs are built with intentional pathways. So, that's not necessarily unique, but the approach, using people in industry to make decisions on what the competencies are, that is kind of unique.

Diana Redasavik...:      It was a very thoughtful approach. I wasn't a part of the initial meetings, but just the way the program came together. Just as Eric had said, pulling in some psychology, there's a course from Herberger. It's a very thoughtful program that leaves students very well versed and well rounded when they complete the program.

Mary Loader:      A truly interdisciplinary experience.

Diana Redasavik...:     Yes, absolutely.

Mary Loader:     Bringing all the best together, which is so what the Interplanetary Initiative's mission is all about. Is bringing artists into the room with engineers and seeing what comes from that. I just love the initiative. I think it's so cool.

Eric Stribling:     Oh, yeah. That is very much baked into, like you said, both the major and Interplanetary Initiative all over the place because it's so easy to look at an engineering design problem and say, "Okay, this needs to be optimized." But someone coming from a sociology background or someone coming from an artistic point of view, when they look at the same problem, they may answer it very differently because they have other things that they value. This is really why humans need to work together to solve problems. When you just treat everything one-sidedly, you do end up with a lot of unintended consequences.

Mary Loader:     Such a holistic way of designing a program and designing a person to interact in our world. I just have a lot of respect for that.

Diana Redasavik...:     Eric, would you mind talking a little bit more about the six made modules of the course? That'll give our listeners a better understanding of just really how unique this course is.

Eric Stribling:     Yeah, so like I said earlier, we have technical competencies and then we have, we'll call them designing competencies. And the course is called Designing and Making for an Interplanetary Future. And what we mean by an interplanetary future is just the fact that it's seemingly evident that humans will go to space more and more. We have now space tourism, we have the possibility of manufacturing. That would be tremendous from a sustainability point of view. If we can do all of our very toxic manufacturing outside of the earth, that may be a game changer for climate change. So, the course has technical competencies, like I said, right now it's mechanical and 3D printing. So, building the structure of something that you're ascending up there. And then we have electronics and programming. So, the circuitry you're required to measure and send back information.

Those are the two competencies right now in the course. But we do want to keep growing it and keep adding new and new technologies, all that are very much based on what real engineers and technologists are using in space. On the other side, we have technological thinking, how do you approach a complex problem? Because right now the technologies that go into, say the space shuttle or some of our satellites, no one person can comprehend everything that's going on. And so you need to understand how to break down complexity into smaller and smaller pieces that a huge team of thousands of people can work on.

Diana Redasavik...:     So, Eric, you spent a lot of time in the studio. What was it like? How long did you spend in the studio? Who did you work with?

Eric Stribling: Yeah, so part of this degree is putting the technology, putting the maker's supplies, in front of the students as soon as we can. But we also wanted it to be online and accessible to as many people as possible. So, that meant recording very high quality videos in the EdPlus studio where students could, say, work on 3D printing or they could work on prototyping out a new circuit. But that required frontal shots. Then I would go back to talking, and then you would have to really zoom in and look at my hands and see what I was physically doing on the circuit board. And then there was code involved, so then you would have to sweep back over to my computer screen. So, there were just a lot of moving parts going on at the same time. And as I understand from the experts here, that would require a lot of video editing had we shot it in a more traditional way.

Matthew Robinso...: Yeah, absolutely. One of the challenges of this was the timeline that you had a very short amount of time to develop an awful lot of content for the course. And for us, we typically look at a two week turnaround on any video, and that was just not going to be feasible with the amount of videos. Plus the fact that this was what we would consider a four camera shoot. As you mentioned, a front camera, a close up, an overhead, and then the computers, the screen capture. That meant that would take quite a bit of assembly time.

And so we put our heads together and the creative approach we thought was, well, what if we do all of the editing live to tape? Meaning that we were live cutting using a switcher between the camera shots that we needed and recording that. So, there was really no going back if we accidentally switched to the wrong camera angle, we just had to accept that we would have a quick switch to the right camera angle in those instances. But what it allowed us to do is move through this content very quickly. So, essentially after Eric would come in and run through the setup or the lecture or the demonstration, we essentially had that video pretty much ready to go right afterwards, which allowed us to move through the amount of videos. Because it was, Ricardo, how many videos did we do?

Ricardo Leon: Oh, I think it ended up somewhere in the mid 40s.

Eric Stribling: No, no, no. I think it was the 60s.

Matthew Robinso...: I was going to say 60.

Diana Redasavik...: I think it was 61 to be exact.

Ricardo Leon: Wow.

Mary Loader: We could look back on the spreadsheet that Eric made, which is amazing. The planning that went into even just drawing out the spreadsheet is a huge benefit to being able to organize yourself in that space.

Eric Stribling: Yeah, because we filmed, what did we film, an average of 12 a day? I would show up at 9:00 o'clock and then I would just stand there and do lecture after lecture, exercise after exercise.

Ricardo Leon: And we've said this before, but we couldn't have asked for a better person to be working on something like this because Eric was great at presenting instructional and just got it, understood what we were doing, how the system worked, how we were going to be switching cameras and we took a little bit of coaching, but he knew keep your head out of the frame when you've got the overhead cam and-

Eric Stribling: I don't know how well I did with that.

Ricardo Leon: Eric did great. You have a great personality on screen. And again, like Mary was speaking to, organizationally the whole thing existed, on that spreadsheet and in your mind, it was really just a perfect harmony between what you were trying to do and what we were trying to capture.

Eric Stribling: Ricardo, flattery will get you everywhere.

Mary Loader: No, let's flatter Ricardo real quick because I got to be here for one of the days when you were shooting, and it was amazing to see it all come together in real time with the four different shots and editing in real time. It was just outstanding work.

Matthew Robinso...: One of the cool things about eliminating all that time that we would've spent in post production, editing and getting all the right shots sequenced together, not having to consider or factor that in allowed Ricardo to really be very creative and spend extra energy on the look of the set, which has this really unique look to it. Something that was influenced from our experience with study hall and creating some content that was going directly to YouTube. So, it was a lot more colorful and a lot more just set dressing to it.

Ricardo Leon: We called in a favor with Dr. Mike Tracy. Thank you very much.

Mary Loader: Thank you, physics.

Ricardo Leon: Shout out to the physics department who let us borrow some telescopes and different kinds of interplanetary looking equipment that we were able to dress the set with.

Matthew Robinso...: Which was great. That was a really brilliant thing to think of, Ricardo. And then you even had time to do some fun things. There is a Halloween themed episode.

Mary Loader: I love that one.

Diana Redasavik...: It's my favorite.

Matthew Robinso...: We got to use our very seldom used lightning effect.

Diana Redasavik...: Those were awesome.

Matthew Robinso...: It was a score to get that one.

Diana Redasavik...: I'm really glad that you mentioned the set because that was fantastic. That really made those videos. It was a really incredible set.

Mary Loader: Not only professionally dressed, but the lighting. It was all just beautiful. The branding with the lighting. I loved it. So good.

Ricardo Leon: Yeah, I mean there was that aspect of trying to brand it, trying to give it a specific look for this course and something that we've continued as we've done other videos with Eric, apart from this main chunk of them, we've tried to maintain that look for him.

Eric Stribling: Yeah, and it's super cool. You guys have also really dressed up the set for, like I said, I do a lot of how technology impacts society and then how society ends up in reverse impacting technologies. And so we had a set where we discussed Amish technology and you guys dressed up the set, what was it, milk jugs?

Ricardo Leon: It was like a bucket.

Matthew Robinso...: Yeah, I brought in a bucket. Old timey bucket. Yeah, it was pretty fun.

Eric Stribling: And then we've just talked about Frankenstein and then you guys did a whole Frankenstein shoot.

Ricardo Leon: And I got to use the lightning again, so that as fun.

Eric Stribling: If you guys haven't read Frankenstein recently, it's actually a phenomenal work when it comes to talking about how people think about technology because really Frankenstein was written right after the Industrial Revolution and it captured people's anxiety about the effects of technology on their lives. So, it's a really neat segment. If you guys ever want to take my course.

Mary Loader: I'm sure people listening will want to take the course. It's a really unique opportunity to play while learning. I love that. I love the hands on nature of your entire assessment strategy.

Eric Stribling: Oh yeah. Personally I wouldn't want to learn any other way.

Diana Redasavik...: So Eric, you just launched the course in Fall B of 2021. What are the backgrounds of the learners? Or I don't know if you want to go typically, as far as technological leadership, but at least the students that were in your course. And the reason I ask is if they have no technology or engineering background, it

just seems like this course is so great to boost their confidence to make it through these exercises. And maybe if you'd like to talk about some of these exercises that they go through in the course. It's really interesting activities.

Eric Stribling: So, the assumption. This is a 200 level course, so a sophomore level course, and we go into it assuming that students have no background in any sort of computer programming, technology, et cetera. And we really start off with very basic exercises. It starts off very well structured at first. So, you start off essentially in the computer programming section. You're going to start off with a basic exercise that teaches you what variables are, what a loop is, how to print to the screen. So, there's a couple of very well-structured exercises that lead you to having enough competencies to where we hope that students can feel confident, that they can take these building blocks and make their own things. So, then at the end of these four very well-structured exercises, then we ask them to express themselves creatively in some way.

And it's different for each module, but that Halloween video, that was a creative exercise where students were supposed to take the electronics that they had learned and tinker with a object. And so for that particular video, I found a Jack-O-Lantern and I poked holes in the eyes and put little light up things so that when you approach the jack lantern, it would light up. And I do that on camera, it took about 15 minutes, and it's really just to give students an idea of what they could do. The whole idea is that working with technology, it should be fun and we hope that students are self motivated throughout the whole course to just keep going and tinkering.

If you are going to make technology, you need to tinker, but how do you teach that? How do you get people to sit there for hours and work on a problem that's hard? But if you look at video games, kids will do it. So, we're just trying to tap into that same ... And I know that there's another podcast that you guys have on gamifying a course, and in a sense that's what we wanted to do with this course was to tap into that intrinsic motivation that students can have with cool stuff.

Diana Redasavik...: And you do, and you have Yellow Dig in the course and still exploring other options to possibly move the course into another platform maybe one day.

Eric Stribling: Yeah. Yeah, we're still working on that. But yeah, Yellow Dig's a great example that we also try to get students to help each other out, show off the cool things that they've done. And we're working on making a lot of these creative projects, maybe some teamwork just to sort switch it up and have students teach each other. That's a goal that we have for this course as well.

Diana Redasavik...: And I think it's worth noting that your step by step videos, really that's what makes it safe for them to succeed. And these videos walk them through all the steps. You are there doing it with them.

Matthew Robinso...: When this project came to our team, the real challenge was that timeline and the fact that we operate at such a high scale that if we couldn't come up with a creative way to approach this, really we wouldn't be able to have done it. So, that was a huge factor of us being successful in this, was actually coming up with this method and realizing we had taken some experience that we had doing some live events, knowing that we have kind of done this live, we just didn't record it in the same way, and taking that and applying it to this particular project that really allowed us to do.

And then the only other thing I'd add is that, Ricardo, you touched on this, but Eric, if you hadn't been the type of person that you were that could go with this, could pick up quickly with what we have and that was also just good on camera, I also don't know that we would've been so successful in moving through 60 videos in such a short period of time if that hadn't all been well organized, planned, and then anchored by your presence on camera.

Mary Loader: Was the studio B space the only space used for videos in this course?

Eric Stribling: Oh, no.

Matthew Robinso...: No.

Mary Loader: Oh, what else did you use of the EdPlus studios? I'd love to know.

Eric Stribling: I used them all. So, actually part of the organization for filming this course was ... So, I mapped out my head and then in Excel every lecture that I was going to give and then what camera shots I needed. So, if I needed all four, if it was a project that required a frontal shot, an overhead shot, and then going to my computer, then I saved those for Studio B. If it was just primarily computer programming, I would shoot that in the micro studio. If it was a more traditional lecture with a PowerPoint, PowerPoints actually don't work well with Studio B, so I would go to Studio A, which is a more traditional green screen where my floating head talks in front of a PowerPoint presentation.

Ricardo Leon: Yeah, Matt, do you want to give us kind of the rundown of what Eric is referring to?

Matthew Robinso...: Sure, yeah. So, we are talking about our Temp E studio space, which is nearly renovated and Eric touched upon the fact that we have three studio spaces there. Studio A is our primary green screen studio. We use that to record the bulk of our videos, really, that we record in a year and that's a lot of that lecture capture content that tries to mirror the experience that faculty have when they would lecture in a classroom against some PowerPoint slides, minus the fact that there's no audience there for them to feed off of.

Our micro studio is a semi self-service studio in which we open that up really to anyone at the university, faculty, or staff. And that space is running OBS

software. It essentially allows for screen captures, picture in picture with the person on screen as well as whatever they're trying to screen capture, or just them on screen, and they can switch between those. And it's a good setup with some good audio, good lighting, but a very useful space.

And it particularly works very well for needing to show off either just a program or a piece of software, a website, doing some sort of whiteboard talk where you're not really needed to be on screen. And then our Studio B space is a modular set space, a studio where we can do anything we want with it. It's a nice big open space and we have several different pieces of equipment and furniture that we can move in to create various different looks. So, it works well for our panel discussions, interviews, labs, and demonstrations, and just anything else that doesn't fall into the more traditional lecture type media that we create.

Ricardo Leon: And how can interested parties book these spaces?

Matthew Robinso...: Way to plug our studio. So, you can find all of our studio spaces at onlinestudio.asu.edu, and you'll see right there on the top menu studios and you can look time in our studio A or Micro Studio. Studio B is the space that we reserve to make the decision of what goes over there and so that usually is a conversation that we'll have with the instructional designer and the faculty. Find out what they're trying to achieve, and then decide if that space is the right space for it.

Mary Loader: And that's the space where you're encouraged to bring props, bring set design ideas, go big or go home.

Matthew Robinso...: Yeah, absolutely. Absolutely. So, we're not even a year in this space and we're constantly trying to push what we can do in here and new looks, and I don't think we want to ever get stale with that. We designed it in such a way that we were hoping that it would kind of have infinite looks and so we're constantly trying to push that. So yes, we encourage all of that.

Mary Loader: So, all of you creative and organized faculty members, feel free to reach out for a conversation on Studio B.

Diana Redasavik...: I was going to say time is a factor, although Eric did manage to do all of this in about three months, which is really a miracle in itself.

Mary Loader: A superhero, really.

Diana Redasavik...: He really is.

Mary Loader: Along with the team.

Diana Redasavik...: Yes. Of course.

| | |
|---|---|
| Eric Stribling: | Yeah. When you say three months, that was starting from no content whatsoever? |
| Diana Redasavik...: | Yes. Perhaps the first time we met. |
| Mary Loader: | Wow. |
| Diana Redasavik...: | Yes, truly. I was looking through the calendar and I think it was late July that we might have had our first meeting. And this was for Fall B. So, for October. |
| Mary Loader: | Not common. |
| Diana Redasavik...: | No, not at all. |
| Mary Loader: | You guys are amazing. |
| Diana Redasavik...: | Wow. Eric is, and so is Ricardo and Matt and everyone at the studio that helped make this happen. |
| Eric Stribling: | It's true. It would've been the terrible without Ricardo's help. It would've just probably been me, selfie, holding my camera backwards while I try to solder with the other hand and burn myself and the phone drops. It would've been a terrible course. |
| Diana Redasavik...: | It helped. You kicked it off with a consultation at the studio, and I think you actually started at our SkySong studio. |
| Eric Stribling: | I did. And they very quickly sent me over here. |
| Diana Redasavik...: | Once they got the full vision. Like, "Oh, we know where to send you." |
| Eric Stribling: | Yeah. |
| Diana Redasavik...: | It worked out well. |
| Ricardo Leon: | Also, the timing of it as well. Obviously this [inaudible] global pandemic, and this studio started to become in more of an active use at the time. And this was like, "Oh, this was welcome." To come in here and go, "Oh yeah, Eric's got a million ideas and maybe we can do them all." |
| Eric Stribling: | I mean, I think it's great. There's so many things that we struggled during the pandemic to teach at a distance. And I think this approach could be awesome because I know that this maker's course is tough to do at home, but you guys did some other cool projects. Didn't you dissect a pig or something? |
| Ricardo Leon: | Right, right. And that experience, Guy Mullins who's now retired, and that's another shout out there to Guy Mullins. |

Mary Loader: We love you, Guy.

Ricardo Leon: He had done this before. He had done multi camera shoots, not editing live, but he had had a model for that that we adapted to Eric's course.

Matthew Robinso...: Well, I was actually just going to talk a little bit on something that Eric said in the sense that this, being this online course and us adding all this media and stuff, it would be very difficult, I imagine, in a classroom to make sure that everyone could see everything that you were doing in these demonstrations. And maybe one of the advantages of this approach was the fact that everyone's getting a front row sea because you watch this video, you get all the angles that you need, it's all very clear, you're seeing everything that you need. Something that may be ... It was a bit of an advantage to just the online version of this course.

Eric Stribling: Oh, yeah. And then when you're confused, you rewind a little bit and you re-watch something that's difficult.

Mary Loader: One of my professors, Peter Bennett, he said at first he was worried about online learning. But then he realized because of the way that we do lab video shoots, it truly is giving each student that front row experience, and they really do get a better experience because of it. So cool.

Diana Redasavik...: Well, because they can revisit it. How many things did we wish we wrote down when we were in class? And your in person students, Eric, how were they able to benefit from these online materials?

Eric Stribling: Well, really we haven't had in-person students yet. I did make myself available to have some of my online students who happened to be in Phoenix, they would come by and could ask questions and I could maybe clarify something in the video. I'd say the hardest lecture was actually the calipers because of how using calipers, especially the manual type, you have to read these very thin lines and that was hard to see on the video. So, I did have students come by for clarification there. But on the whole, they didn't need a lot of help. I think the videos were very explanatory for most of the exercises that they had to do.

Diana Redasavik...: So Eric, how does this course story end? How will your students be able to apply what they've learned in your course to their life?

Eric Stribling: Hopefully this course is very aligned with the needs of the space industry. And my hope is that they will apply it in their jobs. They actually don't leave our course for a while. This course is designed to be taken six times and we've set it up so that there's just new technologies, new group projects that are constantly being added to the course. The hope is that this course just grows and grows and grows and becomes this massive monster that will allow students to keep building their competencies, both in making and also designing.

Diana Redasavik...:    Very nice, thank you. And lastly, what about any lessons learned? Anything you plan on doing differently the next time you teach?

Eric Stribling:    Yes. So, one lesson that we learned was that we had crammed a lot of content into a sophomore level course and students just couldn't keep up with all of the new technologies. So what we're looking to do now is, while we're still maintaining this focus on mechanical and 3D printing and electrical and computer programming knowledge, we're starting to break that up by semester so that students can focus on learning 3D printing this semester while not forgetting design thinking or the social implications of technology. But because oftentimes when you're 3D printing, especially with a cheap 3D printer that doesn't offer, for example, auto leveling, there's a steep learning curve. And to force students to do that steep learning curve across three different technologies, it's a bit rough.

    So, we're looking at sort of having students, when they enter the course, choose one that they will focus on this semester. But because the idea is that this course will be retaken, they just can focus on another technology the next time they take it.

Ricardo Leon:    Have a lighter touch when you touch the table.

Eric Stribling:    Oh, am I just banging? Sorry.

Mary Loader:    You're so authoritarian.

Diana Redasavik...:    They will have choice!

Ricardo Leon:    They will have choice!

Diana Redasavik...:    Choice for all!

Eric Stribling:    Oh, goodness.

Ricardo Leon:    Diana, how would you encourage faculty that have this monster idea to approach moving forward and developing a course like this?

Diana Redasavik...:    Definitely completing the course development worksheet. Really just sitting down on paper and conceptualizing and organizing it by modules and having a consultation with the studio early on. That's key for something like this. Really, we just need to pull everybody together to see how we can make this work. We usually can make most things work. It's just a matter of what is the goal behind every activity? And just talking it through. And that's something that we did on our weekly meetings, just talking through what these modules were going to look like, what the goal was.

Mary Loader: So, Diana mentioned a course development worksheet that we use at ASU Online. And in case you're interested, we've included a copy of our template that we use most commonly at ASU Online to help our instructional designers and our faculty members communicate and plan and conceptualize and prepare themselves to actually build the course in our learning management system.

Ricardo Leon: Excellent.

Mary Loader: Check it out.

Diana Redasavik...: Is this only a course for people in the interplanetary program, the Leadership Technological Leadership program, or can anybody take this course?

Eric Stribling: No. It is available for everyone, and it qualifies as a science and society course.

Mary Loader: Very cool. So, anyone at ASU that needs a science and society course, which is basically everybody.

Eric Stribling: Yeah, it's a requirement for the college.

Mary Loader: Oh, okay. Yeah, so this is a great course for so many people. Very cool.

Eric Stribling: Yeah. Our experience right now is that it sells out fast.

Mary Loader: Good.

Ricardo Leon: Standing room only.

Eric Stribling: Yeah. So, we decided, actually, so we had 10 spots available for in person, and we decided, oh, why don't we add another six? And the next day they were all gone.

Mary Loader: Wow. And that was your in-person version?

Eric Stribling: That's the in version version, yeah.

Mary Loader: That's awesome. So, in person or online, choose your own adventure.

Eric Stribling: That's the goal, yeah.

Diana Redasavik...: Well, Eric, thank you. We really appreciate you taking the time to share your course with us and taking us through the development process. I look forward to working with you on the next iteration of this course.

Eric Stribling: Oh, well, thank you so much for having me. Thank you to EdPlus for making this all possible. Yeah, I just love hanging out in this space.

Ricardo Leon: We definitely became buds.

Eric Stribling: Oh yeah.

Ricardo Leon: It's like, "Yeah, Eric, come over anytime you want. Let's go upstairs, get some coffee Chill for a minute. It's cool."

Mary Loader: You came to Guy's retirement party. You're part of the team.

Diana Redasavik...: You are. I have told him he's an honor member of the EdPlus family a number of times.

Eric Stribling: For sure.

Mary Loader: Absolutely.

Eric Stribling: Next fall, I want you guys to put me behind a camera. Teach me how to do all this stuff.

Ricardo Leon: Sold. You're in.

Diana Redasavik...: Don't ask it twice.

Ricardo Leon: You know how many times I need a stand in to do lighting checks? You just come on over and I'll light you.

Eric Stribling: Light me? Oh, man. That sounds dangerous.

Diana Redasavik...: And there will be free coffee and snacks.

Ricardo Leon: There will be free coffee and snacks.

Eric Stribling: I'm sold.

Diana Redasavik...: For compensation.

Ricardo Leon: For compensation.

Eric Stribling: Well, cool. Looking forward to it. I need studio time anyways. So, yeah, we can discuss.

Diana Redasavik...: Yeah, exactly.

Ricardo Leon: All right, this podcast is over.

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