STUDENTS ASK THE QUESTIONS: Engineering Department With Student Host Marie Galvan & Eugene Mahmoud, Professor Of Physics & Engineering Episode 145

# 00:00:00 **Marie**

# I worked for the MakerSpace, and ultimately, decided to do engineering. I had no idea where to go. I had fantastic faculty that helped me out, and I think one way that I learned to, I guess, progress in this field is by just participating.

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# 00:00:20 **Christina**

# Hi, I'm Christina Barsi.

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# 00:00:22 **Sun**

# And I'm Sun Ezzell, and you're listening to the Magic Mountie Podcast.

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# 00:00:26 **Christina**

# Our mission is to find ways to keep your ear to the ground, so to speak - by bringing to you the activities and events you may not have time to attend, the resources on campus you might want to know more about, the interesting things your colleagues are creating, and the many ways we can continue to better help and guide our students.

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# 00:00:43 **Sun**

# We bring to you the voices of Mt. SAC from the classroom to completion.

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# 00:00:47 **Speaker 1**

# And I know I'm going to achieve my goals, and I know people here are going to help me to do it.

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# 00:00:51 **Speaker 2**

# She is a sociology major and she's transferring to Cal Poly Pamona! Psychology major, English major ...

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# 00:00:57 **Sun**

# From transforming part-time into full-time.

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# 00:01:00 **Speaker 1**

# I really liked the time that we spent with Julie about how to write a CV and a cover letter.

# 

# 00:01:07 **Christina**

# Or just finding time to soak in the campus.

# 

# 00:01:10 **Speaker 1**

# To think of the natural environment around us as a library.

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# 00:01:13 **Christina**

# We want to keep you informed and connected to all things Mt. SAC. But most importantly, we want to keep you connected with each other. I'm Christina Barsi, Mt. SAC alumni and producer of this podcast.

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# 00:01:24 **Sun**

# And I'm Sun Ezzell, Learning Assistance Faculty and Professional Learning Academy Coordinator.

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# 00:01:29 **Christina**

# And this is the Magic Mountie Podcast.

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# 00:01:30 **Christina**

# Today, we spend time with the Engineering Department at Mt. SAC, with our guest student host, Marie Galvan, who interviews Eugene Mahmoud, Professor of Physics and Engineering. Listen in as Marie shares about her pivot from accounting to engineering, and Professor Mahmoud talks all things engineering and the pathways it has to offer enjoy.

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# 00:01:57 **Marie**

# Hi everyone. Welcome back to the Magic Mountie Podcast. I'm your host, Marie Galvan. And for those of you who don't know me, I'm a current engineering student at Mt. SAC, and I've worked for the Mountie MakerSpace since 2017. And for those of you who are not familiar with the Mountie MakerSpace, it's the equivalent of a giant gym, but for thinkers and artists. So, check us out at building F7.

# 

# 00:02:21 **Marie**

# I've also worked for the physics and engineering department for two years now. And this is where I got to really meet professor Mahmoud, who is our guest for today. So, Professor Mahmoud, would you like to introduce yourself?

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# 00:02:35 **Eugene**

# Hi friends, my name is Eugene Leo Draine Mahmoud. I am a professor of physics and engineering at Mount San Antonio College. And currently, I am a co-department chair along with Phil Wolf. And I also teach Capoeira at the wellness center on occasion.

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# 00:02:51 **Marie**

# The first question I got from my parents, my dad specifically - is like, "What is engineering?" Could you elaborate on that Professor Mahmoud?

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# 00:03:03 **Eugene**

# Deep, challenging, philosophical question. There are different ways to think of it. And thinking and centering Mt. SAC students, I feel and I perceive that engineering is a discipline and an industry in which people can use math and science to change their lives, to change communities. I really feel like people think about it as a way that you can interface with problems that you're interested in solving and to have a career in doing that.

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# 00:03:33 **Eugene**

# I think engineering, it allows for innovation and creativity. And then I guess the one thing that I feel like sets engineering apart as a discipline, you can create something, build something, design a service, and what you've created might impact millions of people. Whereas, I feel like in other industries and professions, you're often kind of working one-on-one or in small groups. I think engineering kind of allows us to think about a large scale as well as a small scale.

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# 00:04:07 **Marie**

# You see that a lot in like ... we recently, we have Elon Musk who pioneered the commercial side of engineering. So, a lot of people have been steering towards engineering. So, what types of resources would you recommend to perspective or new students who want to do engineering?

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# 00:04:28 **Eugene**

# I think one of the most important things for new students that are entering the field is to try to cultivate and develop a network: a network of peers, a network of advisors, a network of people that you look up to. Again, in thinking about Mt. SAC students in my own experience, I don't think people often come from places where engineering is like well-known or understood.

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# 00:04:52 **Eugene**

# I'm even thinking of like interactions that I've had when I was a student in school. And you hear people saying, "Oh, math isn't my thing, science isn't my thing." So, I think the main thing is that exposure. I think the engineering clubs at Mt. SAC do that well, activities around robotics and rocketry and kind of other undergraduate research activities.

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# 00:05:16 **Eugene**

# I think the MakerSpace since it's open, has been just a place where you can stop by and you might just drop in and meet somebody that's a professional engineer. You might meet somebody that's a TV personality and an internationally renowned roboticist.

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# 00:05:30 **Eugene**

# So, I just think being able to be in spaces where you're cultivating your network outside of the classroom is probably the most important for helping you develop your engineering identity or your professional identity for that matter, how you see kind of your interest in engineering relating to what you'll be doing or what you're interested in as a professional.

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# 00:05:51 **Marie**

# I know that the engineering department, as well as the physics department have been very adamant about sending people or sending their students to the Mountie MakerSpace and having that insight - I mean, working with you and working with Professor Mason and Professor Miller as well as Professor Saller, they've created a bunch of projects in their classrooms. Are there some newer projects that you could share with us?

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# 00:06:20 **Eugene**

# So, in terms of newer projects, I'd probably want to refer to Professor Saller, who's been working across a couple of grant-funded activities to really revise and redesign our properties of materials class, and our mechanics of materials class.

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# 00:06:38 **Eugene**

# We've recently received some grant funds to support having a universal tester in the classroom at a foundational level for students to see how engineering materials fail, why they fail. And then what are also the methods that are used in the engineering industry to design. And it's not so much like designing a material, it's designing the properties that you want in a device or application.

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# 00:07:04 **Eugene**

# There's a certain project that I think we're right now referring to as the Letter Opener Project that has been particularly inspiring. But I think to your larger question, engineering students need to understand how what they're doing in the classroom relates to the real world. And also, in this kind of mid-COVID, post-COVID moment, we need to be thoughtful about how we're using our in-class on-campus time in ways that cannot easily be duplicated.

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# 00:07:40 **Eugene**

# If we're being thoughtful about our classroom design and what we're preparing our students for, we want to kind of use the best of our resources when we're in-person to engage them. And I think in the discipline of engineering and physics and other applied sciences, a lot of that has to do with laboratory activities, project-based activities.

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# 00:08:01 **Marie**

# Right. I remember during COVID, I was working for Maria at the physics stockroom, and we had to prepare a bunch of take-home kits for the students. I mean, it was so difficult at the time, just because students weren't able to come to campus to pick up their kits, or they couldn't come back to drop off their kits because they went back home. So, what were like the types of issues you've had to face in design ... or redesigning your classes because of the pandemic?

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# 00:08:40 **Eugene**

# And I just want to honor you, Marie and Maria, because you all were in the middle of it serving hundreds of students. In that moment, I think in terms of the faculty, we are trying to do our best job. I want to say that we felt like we were called to how to do this well. There wasn't a professional development or training that we went through in two weeks to see how to do this.

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# 00:09:01 **Eugene**

# We are calling our peers at university programs and saying kind of "What are you doing? What is your university telling you?" But so I think we had some resources about how to develop, take-home laboratory activities through kind of other connections that we've had. One of them being our partnership with Johns Hopkins University, where they've also developed kind of take-home laboratories. So, we had that as an idea.

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# 00:09:26 **Eugene**

# But I would also say that we're really interested in like doing it well. We know that in particular, at community college, there's a perception of, this is just a college down the street, maybe they don't know what they're doing. And if it doesn't work out, I can go to another college. So, I think we really hold a high standard. We want our students to transfer or be employed and kind of be valued as oh, they've done something that already relates to our expections.

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# 00:09:55 **Eugene**

# So, I think that was the hardest thing, but I also think that that's our job as educators. So, it was a struggle and I think in the current moment, as we return to campus, it's still kind of a struggle saying, okay, how do we pivot from what we were doing? How do we set students expectations appropriately? And also, knowing that we are making decisions that other universities and colleges are not, and at the end of the day, students will vote with their feet what they think is valuable.

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# 00:10:24 **Eugene**

# So, it feels like a delicate moment. And at the same time, we've had long conversations about what is working and what isn't. And we appreciate it when students choose to take our classes and they ask us those questions. You know, Marie, you were in that class that I offered last semester and there are some things that I would say I'm holding back on in that class because I feel like I can't execute it well in the current moment under our COVID guidelines.

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# 00:10:51 **Eugene**

# So, I'm making modifications every time I might plan something out and then I might not feel confident about it. And it does make a difference when there are students that are sick for a week. It affects the dynamics of the classroom. It affects what I feel like we're able to do well if students are continuing to be sick. So, I have to make those decisions.

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# 00:11:10 **Marie**

# And I mean, it's so hard to build a connection online. And it must be even harder for professors to build a connection with their students. Do you think that during the pandemic, have you had students who were more interested in doing projects or like were you able to connect with them more in the personal level rather than being in person?

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# 00:11:31 **Eugene**

# To the first part of that question, I would say the most challenging thing was kind of that pivot at the beginning and communication throughout the institution, throughout Mt. SAC of like what is going on. And I'm really thinking of kind of that first Friday or Thursday in which it was like, "Oh, I think we're shutting things down."

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# 00:11:52 **Eugene**

# And it was like we're still going to have class on Monday. And then I think Monday happened, it's like we're going to have a class on Tuesday. It's like, no, we're not. And so, maybe there was some miscommunication that in particular, my students and I experienced in that. And In particular, I'm thinking of the class that you were in programming applications for engineers. There was a project that I had started that week and I was thinking if we're not going to be in person, I can't finish it.

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# 00:12:20 **Eugene**

# And I would say throughout pandemic, throughout COVID, there were students who when we're on zoom, they would be like, "Professor, I'm not really having a good time right now, but I'm sure that this would be much better if it was done in person."

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# 00:12:33 **Eugene**

# And I think for me, it was like I would just love to look over your shoulder and look at your code, but I imagine right now, you're on like two or three different devices and you're having difficulty sharing your screen. And what would be something that I would address in person by like walking across the room is now like a five-minute endeavor of like let's check out our technology.

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# 00:12:54 **Eugene**

# And that was the current moment. And what I will say ... so those are some of the challenges, but what I will say is even in that moment, there were students that were pursuing engineering. They had that in their heart. And so, I think for me, that kind of guides and informs my work is that students know that this is hard, know that this is challenging, and they're still willing to take it on even in moments like that.

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# 00:13:18 **Eugene**

# And I said, well, if I still have enough for this class, it's my job to kind of offer the best class possible. But there were definitely a lot of questions about is that happening? Am I meeting the needs of my students? And again, students vote with their feet, and EW was a way that students voted.

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# 00:13:36 **Marie**

# EW was great. Could you elaborate what EW is?

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# 00:13:40 **Eugene**

# So, EW refers to Excuse Withdrawal, which is kind of an option on a regular withdrawal in which a student leaves the class before they would receive a final grade. Excuse withdrawal during the pandemic was something that was allowed for students to take up until literally the last day of the class without kind of a petition. EWs or excuse withdrawals had previously existed, but they needed a petition and it was kind of a timely process.

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# 00:14:09 **Eugene**

# And so, I would say on the teaching side, we saw large numbers of students taking EWs. It affected retention in classes, and it ultimately, affected what can be pointed to as the success of students during the pandemic, because students elected to kind of leave before completing the class in an excused way.

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# 00:14:32 **Marie**

# I'm curious, how many on average, have you lost due to EWs?

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# 00:14:40 **Eugene**

# So, speaking to myself and the classes that I taught during the pandemic, I would say about half of the students from the beginning of the semester left the class either with Ws or EWs. And I would say that prior, maybe a third of students were leaving class with Ws. So, it makes a significant impact on progression through courses.

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# 00:15:05 **Eugene**

# So, Marie, if you think about classes that have like an engineering pre-requisite, if we're looking at half of the students not finishing - and I would also say these are things that affect our scheduling of classes, where we're expecting a certain number of students to finish and go on to the next class. So, it had a large effect.

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# 00:15:25 **Marie**

# Yeah. So, backstory, I tried to register for Engineering 16, which is an electronics class that Professor Mason had designed. And it was originally offered this semester, but was ultimately, canceled. Could you elaborate or like could you share with us the situation?

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# 00:15:45 **Eugene**

# Yeah. I would say that there are lots of challenges around scheduling engineering classes in particular, in the spring semester, because so many of our students in our program are planning on transferring and often students will wait till the spring to take certain engineering-related classes.

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# 00:16:02 **Eugene**

# We have a limited number of rooms, we have a limited number of faculty and we want to make the best decisions based on enrollment in classes. Engineering 16, the class that you mentioned, digital electronics, new class, newly designed, very excited. It's a class that would serve electrical engineers, software engineers, a population that we don't offer a lot of classes for.

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# 00:16:26 **Eugene**

# We didn't have a lot of demand in part because it's a new class and we continue to have a lot of demand for kind of other, I would say entry-level physics classes. So, when as a department, we're making decisions about where to put faculty, one of the things that we have to look at is enrollment. That being said, in engineering, I think at this point, we have 16 different classes.

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# 00:16:49 **Eugene**

# So, our classes are not going to be highly enrolled as kind of general physics classes. And it's something that we have to weigh. If we don't have a lot of enrollment, maybe we should postpone this and do a better job of marketing so that we can get more students enrolled. That would be a better use of our resources if we can kind of maximize enrollment.

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# 00:17:10 **Eugene**

# But at the same time, and we can get into this with other questions. There are lots of challenges around kind of offering a full-year-round engineering program so that students could kind of pick and choose when they take things each semester.

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# 00:17:26 **Marie**

# Right, we were talking about the-

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# 00:17:29 **Eugene**

# The engineering summer cohort.

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# 00:17:30 **Marie**

# Right, we did talk about whether we should have a kind of a pathway. It's like a set of classes that students should take, depending on what types of specification they would want to go into, like mechanical engineering or civil engineering, space engineering. Are there resources available for students to access them?

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# 00:17:54 **Eugene**

# With regards to pathways about like what students should take when they're coming into college that's going to align them up for engineering?

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# 00:18:01 **Marie**

# Right, yeah.

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# 00:18:02 **Eugene**

# Yeah. So, you mentioned ESC, the Engineering Summer Cohort, that's something that we offered for the first time last summer. The idea was to try to create a two-week free non-credit experience around what is engineering and also developing an educational plan, because we often hear from engineering students towards the end of their time at Mt. SAC, that, "Gee, I wish I knew about all these resources and faculty and staff when I first got here."

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# 00:18:30 **Eugene**

# So, I think that's something that we're really excited to be doing. We're planning on offering that. I would also point out again, physics and engineering department is a single department, but we now have an engineering program website. And that kind of lays out what I would say are recommended core sequences for people that are interested in certain disciplines.

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# 00:18:48 **Eugene**

# And I want to say a year ago, we didn't even have that. So, that's a new resource that's available for students. It also has information about the faculty and about the different university programs locally and regionally that students can transfer to.

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# 00:19:04 **Marie**

# So, I was told in high school that UCs and CSUs are different schools of thought. Where UCs prepare you to do research and CSUs prepare you for industry. So, what would you recommend your students to do to prepare for CSUs or UCs?

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# 00:19:21 **Eugene**

# I think the least self-serving thing that I can say is I would recommend students to do research. If you are interested in a field or a discipline or a certain industry, you should do research. If you want to work at SpaceX, you should do research about SpaceX and where they hire their students from.

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# 00:19:41 **Eugene**

# If you want to work on Formula 1 race cars, you should do research about a Formula 1 team, and kind of what are all the skill sets that are drawn and the programs that you go to might be different than if you just said, I'm going to be a mechanical engineer, or I'm going to be an aerospace engineer, if you were to do kind of the research that way.

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# 00:20:04 **Eugene**

# And the reason why I suggest that is because in honesty, there's so many different engineering programs. We think about a school like Cal Poly Pomona that literally has 11 disciplines and some of those disciplines have sub-disciplines.

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# 00:20:19 **Eugene**

# And so, I'm really cautious about kind of telling students to pick a school or to pick a CSU or a UC - if you think about it, the California Community College system, the UC system, the California State University system, it's the largest kind of combined system in the country. There are so many options.

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# 00:20:41 **Eugene**

# So, I want to encourage students to do research. That being said, the majority of students that come to Mt. SAC and are interested in engineering are interested in transferring to Cal Poly Pomona, because it's literally one farm away and it's affordable and there are good faculty there, and the students that transfer there have a good experience in terms of employment. But I do perceive my job as a faculty member to say, "What is your identity around engineering?" And then to encourage people to explore.

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# 00:21:17 **Marie**

# I imagine that every school that you will apply to will have their own specialties. How would you recommend us to find out about those programs and like how should that impact our decision on where to ultimately want to apply?

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# 00:21:33 **Eugene**

# Yeah, I would suggest that people visit schools and I think that's a challenge in the current moment. The other thing that I would suggest just trying to be practicals, that students should make LinkedIn profiles and they should connect with their faculty, they should connect with their peers.

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# 00:21:47 **Eugene**

# I feel like LinkedIn - and just to be clear, I don't work for them; but it's unique in that I can go on LinkedIn and I can see I'm two or three degrees away from somebody that works at Southern California Edison or somebody that goes to a certain school. And so, I think having that visualization of how you are connected to things that you're in is a great tool.

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# 00:22:09 **Eugene**

# I also just feel like when students are applying for the transfer process, I encourage them to apply for more than one institution. I think often, students don't learn about institutions until they apply for them. You know, it's just a reality.

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# 00:22:23 **Eugene**

# So, I just want students to be aware of their options. We also have a fantastic transfer center here, but yeah, I think networking, talking to people - and the main thing I would say is just don't apply for one. It's like shoes; you wear one pair a day, but it's good to have options.

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# 00:22:43 **Marie**

# That's so true. I mean, as a student who ... I mean, I've been a student for Mt. SAC for so long. I mean, I think I started 2014, and then after I finished my accounting certificates and associates degree, I worked for the MakerSpace. And you met me there and ultimately, decided to do engineering.

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# 00:23:04 **Marie**

# I had no idea where to go. I had fantastic faculty that helped me out that included you and Professor Mason. And I think one way that I learned to, I guess, progress in this field is by just participating in projects. You have led certain projects in the department, such as the Bobo camp. Aside from robotics, are there other projects right now that students could join?

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# 00:23:34 **Eugene**

# I would say currently, we're kind of focused on robotics and rocketry. It's a challenging experience to kind of come back to campus and try to get things running, as I know, you understand as a person that works at the MakerSpace. I would say that there's always capacity for us to take on new projects where we have students that are committed and really motivated to kind of take leadership.

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# 00:23:56 **Eugene**

# We've previously done weather balloon projects, students have participated in different programming competitions, hackathons, kind of with and without advisory support. So, I think there's lots of possibilities and opportunities, but yeah, in the current moment, we also just really want to meet students' needs.

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# 00:24:16 **Eugene**

# I think one aspect of that that has kind of captured my focus in the past couple of years has been preparing students for employment in addition to undergraduate research opportunities and competitions and things like that. And that kind of takes a different set of resources and bandwidth than kind of working with a small group of students around a project that's fun and related to their coursework.

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# 00:24:39 **Marie**

# I guess my last question that I have for you is related to transfer. Are there ways for Mt. SAC students or Mt. SAC engineering students to get GPA bumps when transferring?

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# 00:24:51 **Eugene**

# So, to this question about a GPA bump or some other incentive related to the admissions process, Mt. SAC is considered a local school to Cal Poly Pomona. So, all students essentially get a GPA bump whenever they apply to any program at Cal Poly Pomona, and that's particularly significant for engineering programs that are impacted.

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# 00:25:14 **Eugene**

# So again, right now, Mt. SAC students and Citrus students receive a GPA bump. Right now, physics and engineering faculty are in conversations with folks, engineering faculty, and admissions faculty or admissions representatives at Cal Poly Pomona and at Cal State LA, around how completing engineering courses, in particular, can get you a GPA bump.

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# 00:25:40 **Eugene**

# So, we know that there is a perception around, I need to have a high GPA to transfer. And often, there might be a decision between, should I take a GE class? Should I take an engineering class? Engineering will possibly decrease my time to degree, but my engineering-grade might not be as high as my grade in the GE class.

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# 00:26:02 **Eugene**

# The universities are having these conversations with us . And one of the things that they really value that also students value is time to degree. So, just to make a comparison, it is more valuable for a university to accept a student who will complete their degree in two or three years, as opposed to a student that has a fantastic GPA, but hasn't really taken engineering classes and might need four or five years.

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# 00:26:29 **Eugene**

# Because again, in engineering, the coursework is sequential. Whereas in other programs, there aren't necessarily like three or four years of courses that you have to take in a specific sequence. So, being more specific - if I'm a civil engineering student and I don't take survey, it might be that even if I took statics, I couldn't progress in like my discipline coursework after I transfer until I take survey.

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# 00:27:00 **Eugene**

# So, that decisions to not take engineering coursework at the community college will delay degree completion to a point, that thankfully, university programs are now willing to incentivize that in the transfer admissions process. So, this is something that's already happened at San Jose State to a certain degree, around engineering. And I think it's something that engineering students will be seeing more and more, and it will be our responsibility in this department to communicate that because it's something that's new.

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# 00:27:34 **Eugene**

# And we know that the most common reference for transfer is Assist. And I would say that there are often things in Assist that are incomplete, incorrect, or not up-to-date in particular for engineering students.

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# 00:27:49 **Marie**

# So, does it depend on how many classes you've taken or like does it depend on the type of major you are? Do you have to look into what are the required classes to complete the degree in order to get that out of the way?

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# 00:28:01 **Eugene**

# Yeah, so I would say yes to all of your questions, and it depends. At San Jose State in particular, they created a system where for each major, they had a list of recommended classes. And every time you completed an additional recommended class, they displayed a lower minimum GPA cutoff. So, that was a very explicit system.

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# 00:28:24 **Eugene**

# I'm not sure if they're still doing it that way, but often, I would say students don't find out about this because it's not on assist.org. So, San Jose State was communicating all this information through their own website. And some of that was not transferred to students if they weren't looking on their website. So, I would say that that's one specific example where it depends upon the school and the major.

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# 00:28:50 **Eugene**

# Going forward, I would say our program is working around associate degrees and certificates that we feel like will do a better job of communicating to students, "Here's a body of coursework that you should take if you want to be well-prepared for this major."

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# 00:29:07 **Eugene**

# And we also are moving towards program articulation as opposed to just course articulation so that we could say to a school like Cal Poly Pomona, for example: "This student who's completed these two certificates and an associate's degree, even if the courses are slightly different, you should accept all of their coursework and you should clear their prerequisites so that they could start at the junior level."

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# 00:29:32 **Eugene**

# And I think that would be something that would be clear for students in the same way that ASTs for other disciplines are for those students. And by ASTs, I'm referring to associate degrees designed for transfer that have been approved at the state level because of the complexity of engineering, because of the number of different disciplines that doesn't exist. There are lots of different projects that are working to address it, and some of the things that I'm mentioning are part of those projects.

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# 00:30:00 **Marie**

# So, are the ASTs designed to allow students to transfer easier and work with the universities, so that universities such as San Jose can just say, okay, these students are local, they have completed all these classes, we should just take them in.

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# 00:30:18 **Eugene**

# So, speaking about the associate degrees that we've been designing at Mt. SAC for engineering and engineering technology, I would say that first, they were created to communicate expectations around preparation for employment so that students could know kind of what is expected if I want to work in an engineering and engineering technology industry coming out of community college.

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# 00:30:40 **Eugene**

# I would also say that in addition to career preparation, they were to communicate alignment with different disciplines that we saw our program kind of being able to prepare students well for. And I would say that we're still in the process of having those degrees finalized, but even in the proposal stage, we've gotten interest from Cal State LA and Cal Poly Pomona about using these in an official way in the transfer admissions process to communicate both to students at Mt. SAC and to university transfer programs that students have completed a body of work.

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# 00:31:17 **Eugene**

# And in recognizing that Assist, often is not up-to-date and incomplete, and in recognizing that undergraduate programs often change their coursework, that a program articulation might be a better way to serve engineering students than a course articulation, specifically when there are so many courses, combined math courses, different engineering courses that can impact students differently. And recognizing that this is a unique problem to engineering, there needs to be a unique solution.

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# 00:31:52 **Marie**

# I really appreciate all the work that you've been doing for the engineering department. I mean, it serves so many students that I've met including me.

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# 00:32:01 **Eugene**

# And it's not the work that I've been doing, it's the work of the faculty and Mt. SAC as an institution. And really, it's calling out how challenges for engineering transfer students are a systemwide problem. Students on average, who start studying engineering at the community college level might take seven years to complete their degree, so that's inequity and that's systematic inequity, and that's something that's going to take a system to respond to.

# 

# 00:32:31 **Eugene**

# And so, I think any success that we have had at Mt. SAC around kind of pointing that out or designating resources to address that problem, it's in recognition of the size of the problem. And in trying to serve students better, which I would say is a large part of the mission here at Mt. SAC, is how do we improve what we're doing?

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# 00:32:52 **Marie**

# Thank you so much, Professor Mahmoud. I really appreciate your time today, as well as your time anytime I come to your office and raid you with questions. Thank you so much. I appreciate it.

# 

# 00:33:07 **Eugene**

# Marie, I think very highly of you as a student and also as a colleague in this work. I thank you for leading this conversation. It's been really exciting for me.

# 

# 00:33:19 **Christina**

# Transferring from Mt. SAC to university to earn your bachelor's degree has countless benefits and opens the door to many opportunities. Learn how to do so with an Associate of Arts or Associate of Science transfer degree like we highlighted in this episode by using transfer resources, such as the counseling department or the Transfer Center. Just go to mt.sac.edu/counseling or mt.sac.edu/transfer.

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# 00:33:26 **Christina**

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