

edX Engineering Simulations: Respondents' Narratives

Impacts on...

<p>From New South Wales, Australia: I will be using ANSYS as a tool for a freshman project-based course. I was looking for a tutorial online that the students could use considering that they would have never used ANSYS before. Yesterday I was lucky enough to stumbled upon your course "A Hands-on Introduction to Engineering Simulations". I signed up to take it and, having gone over the first section, I'm sold! =) You've done an amazing job! Also, it is exactly the sort of thing I was looking for! I wanted the students to know what is under the hood without having to go into so much detail that you never get to use the software</p>	<p>teaching, curriculum</p>
<p>Here in Brazil we don't have much material to learn about this. Thank you for sharing this knowledge with us. This will contribute in a singular way to my education and will give me a better performance as a future mechanical engineer.</p>	<p>access to education</p>
<p>From Cuba: I started the course because.. it is related to my PhD. ongoing research. Today I understand the engineering processes better and can set up my own model, more confident of the results. I have already shared my experience with my colleagues [who] find themselves very inspired to sign up for an on-line course.</p>	<p>comprehension, confidence, peers.</p>
<p>From Holland: I learned FEM at Rotterdam University of Applied Sciences, but they focused on the stiffness matrix and derived math... a bit narrow for such a complex subject as FEM. This course broadened the view so much. In my home country, knowledge within companies about FEM and simulation tools is, on the whole, rather poor. So I was very pleased with this course. I also encouraged a former colleague to do this course, for I am sure it would help him a lot.</p>	<p>comprehension, peers.</p>
<p>From India: I mentor and guide many undergraduates on their project here in Mumbai. This course gives us great insight on how to approach simulation projects with relation to engineering principles...</p>	<p>teaching, curriculum</p>
<p>From Egypt: I am an aerospace engineer doing a masters in numerical simulation... although I studied FD during an undergraduate course, I didn't know how ANSYS worked and the concepts behind pushing the buttons</p>	<p>comprehension</p>
<p>From Mexico: I just graduated with a masters from my home country. This course gives a really nice perspective of what is happening outside [and the] professor...really motivated us to keep on learning. I work now as a temporary teacher in a university, so I recommended [these courses] to all my students.</p>	<p>continued learning</p>
<p>From Germany: I [intend to] share the gained knowledge in this course whenever I have an opportunity and I'm looking forward to participating in your upcoming courses in this field.</p>	<p>knowledge sharing</p>
<p>I needed this course to learn the basics of ANSYS Fluent for my research. I managed to learn a lot, especially from the discussions on the governing equations. I will now practice [what I have learned] on SimCafe and move to my specific research topic.</p>	<p>research direction</p>
<p>My intentions were to learn few more tips in FEA and CFD, as well as to see the way cases like the Bolted Nozzle Flange and multi-physics Wind Turbine Blade are simulated. In other words I wanted to see how the mathematical model were developed and implemented in numerical simulations. Yet, I gained more confidence in driving my engineering design career through numerical simulations.</p>	<p>confidence conducting engineering design through numerical simulations</p>
<p>As an engineering major, I was nervous about trying to learn a new program, but this course greatly exceeded my expectations. I feel confident adding ANSYS to my growing resume and look forward to using it in real-world applications.</p>	<p>skills added to resume</p>
<p>This course helped me build a foundation with the Workbench Environment [and] will certainly impact my career in a big way.</p>	<p>career</p>
<p>I have developed new workflow and techniques to develop simulation solutions and techniques to verify results.</p>	<p>developed new workflows and techniques</p>
<p>At the beginning of the course, I was zero in FEA, CFD and ANSYS. Now I can practice problems in ANSYS individually. Thanks for everyone who creating and maintained this course. I have recommended this course to my friends [and] will definitely recommend it in the future.</p>	<p>skills, ability to practice problems</p>

<i>This course is helping me get closer to achieving my dream job. I graduated from school in 2014 with a BS in Mechanical Engineering and ended up with a job in Chemical Engineering. I have missed being involved in design and analysis and am working very hard to get back into the field. My dream is to end up in the space industry and getting to [learn] from someone who is working for the company that I think is at the top of the industry was extremely exciting for me. Thank you for a great course!</i>	career "closer to achieving dream job"
<i>There will certainly be trickle down effects [from this course] on the other members of my FSAE team whom I will teach what I have learned to improve how we do simulations.</i>	colleague's FSAE Team, improved methods for doing simulations
<i>This is the just the beginning of new career. Fluent was new for me and I will use it as a new job application or probably for a new master's degree in aerodynamics.</i>	new career direction
<i>I registered to this course with no specific expectation, but I found it very inspiring and plan to use it with my students and interns.</i>	teaching, curriculum
<i>This will put me closer to obtaining a career in aerospace and defense. I will be now able, to teach other students the basics of FEA and CFD in my university in a much more professional manner.</i>	career "closer to obtaining career in aerospace and defense"
<i>[This course] has had a very important impact on me. It has opened the way for me to start a new career as a designer.</i>	new career direction as designer
<i>I'm an Engineering Manager in my early 40s, and this course has been a great way for me to update my knowledge, as well as provide critical thinking to engineering simulations.</i>	updated knowledge, critical thinking skills
<i>Earlier I did not know the meaning of the symbols and options in ANSYS while performing simulations. Now, with a deep understanding...I know what I'm doing and I apply it to any problem...</i>	comprehension, skills
<i>From Eugenio: I'm a student of Civil Engineering in Mexico [who is] interested in going on to graduate school. I had never used ANSYS in my life, so this course was a big step to understanding more about commercial software. I couldn't imagine what kind of models we might resolve during the course [and was] surprised with the amazing models and the focus [provided] in the explanations. Thank you for the invested time, I can assure you that this will help a lot of people.</i>	comprehension, peers
<i>This course had a great impact on me. I graduated from college in 2015. For my final year project, I chose the effect of air speed over lift and drag for a symmetrical airfoil. But I didn't know "What is CFD"? It was just a black box for me, pressing buttons, [all] unknown to me. Now I have a real understanding of simulations and am getting my interest in doing an MS in CFD.</i>	decision to pursue graduate study
<i>I took a graduate level CFD course in the past, but it was extremely focused on different numerical methods... I didn't feel I had a good understanding of the big picture. However, this course was very thorough on the big picture and it greatly helped me [understand] the fundamentals of FEA and CFD.</i>	comprehension
<i>I'm currently working in an Aerospace and nuclear company. This course will [help me] compare results done with CATIA V5 and hands calculations.</i>	job skills, calculations
<i>As a learner, the course has given me the ability to understand the entire process of how to [approach] a mathematical model... As an undergraduate, I will be able to help others students perform good simulation analyses and how to do [them] correctly.</i>	comprehension, peers.
<i>I took this course so I could learn to use CFD specifically for my University's Rocket Team, as well as for my senior capstone 3 years away. I learned a great deal more about how CFD and FEA works in general, and feel like I have a better understanding of the physics. I intend to use some of what I learned lead the Rocket Team, and to have more professional and accurate work.</i>	comprehension
<i>Every time I tried to pick up a book [about CFD], I was simply overwhelmed... This course was exactly what I needed; an overview of the theory and a systematic approach to simulation problems in ANSYS.</i>	comprehension
<i>[The course] helped a lot in advancing my basic simulation on Caesar II which I am using in my work.... When the course [is] available in future, [my friends] will pursue the same.</i>	work skills, peers
<i>The course helped me to explore a new me!</i>	sense of self

<p><i>I am 4th semester mechanical engineering student [and] was very excited about this course since it covers more than what we do at my university. It has been very useful to me.</i></p>	<p>access to education (more curriculum)</p>
<p><i>I was always curious to know what were the physical principles and logic behind the solver and this course provided me the right path to learn those skills.... it is really going to help me to enhance my career...I am really thankful to Cornell and edX for providing us such an amazing course to students all over the world.</i></p>	<p>skills, career</p>
<p><i>From P.P. in India: Before attending this course I was using ANSYS without knowing... "what's under the Black Box?" Now I know which type of analyses and governing equations being used.</i></p>	<p>improved software understanding</p>
<p><i>This course strengthened my capabilities as a professional engineer...I studied mechanical engineering, getting my degree in 2011. While I did a strong emphasis in vibrations, heat transfer, solid mechanics and numerical methods, I didn't have the opportunity of learning FEA nor CFD... After 5 years in the industry, it amazes me how useful is FEA and CFD, and particularly software like ANSYS. I can simply draw a sketch of a part I'm working in, using Solidworks, and apply loads in ANSYS getting a very accurate idea of how it behaves. [It] also gives a lot of insight into possible tracks I would like to follow in graduate school as a future MSc applicant/student. I am already full of new ideas on simulation applied to my current research interests: vibrations, analytical dynamics and numerical methods/numerical analysis.</i></p>	<p>research, professional engineering skills, impact on decision to pursue graduate degree</p>
<p><i>A few months ago, I started learning FEA and CFD, just like a theory, nothing related to ANSYS or CAE software. This course was what I was looking for, a bridge between theory and practice.... I feel like another person with new skills in simulation which I will put in practice.</i></p>	<p>skills, sense of self</p>
<p><i>It was a real pleasure to attend this course as it links real world complex problems to theories with adequate balance between depth and practicality. The course also sparked in me possibilities to use simulation in a bunch of complex problems at work, especially in the field of reverse osmosis filtering processes. Thank you so much for the opportunity. Looking forward to having more.</i></p>	<p>complex problem solving at work</p>
<p><i>I have always been interested in simulation related subjects like FEA and CFD. So when I saw this course I immediately signed up. I was determined to finish the course with good scores and more importantly with a good learning experience. I am pleased to say that I have achieved the goals I set for myself. I have been working with my [mentor] on a Master's thesis on Hypersonic flows. I will be using ANSYS in my thesis now to get my results. There were [additional] trickle down effects as my class mates and juniors saw me taking this course and joined me when I was running simulations. They particularly liked the bolted flange model and its simulation. I had the pleasure to explain to them what I had learned in the course which helped reinforce the concepts I was learning.</i></p>	<p>Master's thesis, academic peers, teaching</p>
<p><i>Before this course I was unsure about my major, but now I am 100% sure that I should stay in Mechanical Engineering. Also, as Chief of Structure of an energy efficiency competition team (our gasoline prototype makes 159 km/L), this course has greatly helped me to see my past errors while simulating parts of our project, and because of that my team may also greatly benefit from the skills I acquired during this course. I plan to apply those skills while designing our new aluminum structure, since the actual one is made of steel, so that we can reduce the weight of the prototype and increase our results.</i></p>	<p>choice of major, energy efficiency team, choice of design</p>
<p><i>I work in the ship industry and sometimes we need to do structural analysis... and if I have to be honest, now I understand it better. After I made the course successfully, one of my colleagues is now looking with "different eyes" on me.</i></p>	<p>comprehension, how one is seen by professional peers.</p>
<p><i>Before this [course] I didn't know how use simulation software like ANSYS to solve engineering problem. After I took this course, I am extremely interested in exploring more about CFD because some of the cool examples given in this course.</i></p>	<p>area(s) of interest</p>
<p><i>Computational mechanics have become a must have for the CV of a mechanical engineer, and even though I have worked with ANSYS in the past, I have never had such clearly and sound explanations. This is the beginning of a new era in my life to become a simulation expert. Thanks!</i></p>	<p>comprehension, career</p>
<p><i>Initially, I had many assumptions that simulation software would be very difficult to grasp. However, the way course went was totally fabulous. It gave me enough confidence to tackle more complex problems in the future and motivated me to explore [concepts] more. The intricacies of ANSYS were explained in a simple and lucid way. Being a chemical/process engineer I found the 2D heat conduction and Fluent module very appealing. One of the important parts of the course was [the way in which] theoretical lectures were aptly complemented with real practical in Ansys. Getting a first-hand experience at such a software was itself a big deal for me.</i></p>	<p>confidence, motivation for additional exploration</p>