Teaching Statement

One of the foundational pillars of being a great educator is the ability to effectively convey knowledge to the students. College education isn't merely about preparing students to achieve high GPAs; it's primarily about preparing, specifically guiding, them for the pursuit of their dream careers. In an educational institution, educators serve as mentors, while students, the mentees, seek guidance in their future career choices, identifying self-improvement techniques to maximize their collegiate years, and adjusting to adult life within the inclusive college setting. Consequently, it's imperative for educators to be equipped to mentor students beyond the demands of specific course contents.

As a lead instructor, I've been teaching multiple junior and senior-level courses in the Department of Industrial Engineering at Southern Illinois University Edwardsville (SIUE) since 2021. This teaching role involves overseeing every aspect of these courses, developing a curriculum, designing the syllabus based on student needs, and grading exams, quizzes, exercises, and projects. Courses I have taught include Lean Production Systems (IE-488, with student evaluations averaging 4.40/5.00 in Spring 2021 and 4.24/5.00 in Spring 2022), Methods Design & Work Measurement (IE-451, with student evaluations averaging 4.21/5.00 in Spring 2022 and 4.87/5.00 in Spring 2023, Spring 2024 ongoing), and Manufacturing Processes (IE-370, with student evaluation averaging of 4.93/5.00 in Fall 2022, Fall 2023). Besides my role as a lead instructor, I have also provided strong support to my teaching assistant roles in several levels of industrial engineering courses since 2017.

In my courses, I've transitioned from the traditional teaching methods – where students primarily receive information from the instructor and finish assignments outside the classroom – to the Flipped Learning (FL) approach. With FL, students can access online resources at least a week before the scheduled class, allowing them to engage with the material at their own pace. To ensure that students review these materials before class, I assign reading tasks and monitor their progress online. As a result, when they come to class, they are prepared to engage in in-depth discussions and seek clarification on the challenging aspects of the course materials. I also provide practice questions that I solve in a step-by-step manner. This hands-on approach helps them with a clearer understanding of the process(es) and better prepares them for assignments and exams. If there is a sufficient amount of time left in the course, most of my classes conclude with either practice exercises, quizzes, or multiple-choice questions, gathering feedback on their understanding of the topic. Beyond our classroom time, I always maintain an open-door policy, offering regular office hours and ensuring 24/7 accessibility for course-related queries via electronic communication. Being available to my students outside of the classroom time is the most important aspect of creating a welcoming environment without any fear of judgment, which encourages them to continuously discuss and exchange their ideas with me and learn even when they are not in the classroom setup. I believe that this safe space approach should be maintained even after their graduation to build a life-long relationship atmosphere.

Beyond applying the FL approach, I've also incorporated project-based learning into the curriculum, enabling students to immerse themselves in real-world scenarios. To facilitate this, I've established partnerships with industrial organizations, including Eaton Corporation, Carr Lane Manufacturing, and Amsted Rail. These companies share the current challenges they encounter, which I then convert into project outlines for students. This practical experience lets students bridge classroom theory with real-world application, concentrating on topics like time study, 5S, Kaizen Principles, Project Management, Continuous Improvement (CI), Value Stream Mapping (VSM), and Single-Minute Exchange of Die (SMED), etc. Moreover, by organizing additional field trips and creating out-of-class learning opportunities, they can grasp the fundamentals of manufacturing processes up close. Thus, practical engagements not only help their problem-solving abilities but also develop their critical-thinking mindset. I strongly believe that by leveraging my potential faculty position and the available resources in the local region, I could take a step further for my industrial collaborations and establish strong programs for my courses to develop our undergraduate and graduate students. In my future plans, I would like to establish these industrial partnerships where students not only work on the term projects but also have a chance to do their internships. These experiences will give them a notable advantage over their peers in their respective fields, and present University's Engineering Community as a hub of excellence and collaboration, fostering a generation of engineers equipped to address complex challenges and contribute significantly to their professions.

During the term projects, instead of setting a single deadline at the end of the semester, I break the projects into phases with staggered deadlines throughout the semester. This ensures both the students and I stay on the same page regarding their progress and my expectations. Grading is structured around these milestones I set, which motivate students to distribute their effort evenly and grasp the importance of the project. This approach alleviates the stress at the end of the semester, allowing students to finalize their projects more comfortably. However, one challenge with these industrial partnerships is the potential transportation issues and limited availability some students have outside of classroom hours. To address these issues, upon consulting with my advisor, Dr. Sinan Onal, I introduced the option of in-house projects. This allows students facing transportation or time limitations to choose these more conventional projects.

Alongside FL and project-based teaching methods, I am currently exploring the concept of Just-in-Time Teaching (JiTT) and considering how to integrate it into my teaching approach. Prior to the scheduled class sessions, JiTT enables students to communicate challenges and concepts from assigned materials. As an instructor, this enables me to prepare my responses and interactive problem-solving modules beforehand. As a benefit of this innovative teaching method, I can allocate more time to address students' questions during class.

Outside of classroom time, I have passionately mentored my students. In Spring 2022, a former student reached out to express that my course on Lean Production Systems not only enhanced his knowledge but also proved invaluable during his job interviews. Subsequently, he asked me to be one of his job references and I have happily agreed as I am pleased to provide a glowing reference for his work ethic and knowledge of the materials. Another student contacted me that the material I taught had directly contributed to her securing a job offer, and she expressed her gratitude for being so helpful in this opportunity for her career. Yet another student highlighted that my unique presentation style and interactive teaching approach distinguish me from her other professors. She later followed up to say that my methods have helped her a lot and she is more comfortable reaching out when questions arise. Receiving such feedback increased my confidence and enthusiasm as an educator. I, therefore, find teaching and preparing students for their future in both the Industrial Engineering department and postgraduate careers very rewarding. As a result, my commitment to inclusive academic excellence both inside and outside the classroom culminated in being honored with the Outstanding Teaching Assistant Award at the doctoral level in 2022.

In my classes, I aim to foster an inclusive environment where students feel comfortable participating in discussions and asking questions about course materials. Moreover, I will introduce leadership opportunities with class projects. This will guide students in setting their project objectives, following targeted deadlines, and effectively functioning as a cohesive team where they exchange their ideas without any fear of judgment. I firmly believe that collaborating with individuals from varied learning styles, cultures, and nationalities enriches the learning process. This diversity within team projects not only elevates their academic experience but also cultivates interpersonal skills that serve them well throughout their educational journey and beyond.

In my future department assignments, I am open to teaching a range of courses, including System Engineering Concepts, Human Machine Interface, System Engineering Design Colloquium, Optimization Models and Methods, Systems Design I & II, Deterministic Decision Models, Data Mining, Data and Information Engineering, System Evaluation, and Linear Statistical Models. I can also teach the following courses: Engineering Statistics, Quality Control and Management, Introduction to Human Factors Engineering, Process Improvement Through Planned Experimentation, Facilities Planning and Material Handling, Production Systems Planning and Control, Industrial Engineering Design, Engineering Economic Analysis, and Introduction to Lean Systems. These courses could benefit the elective courses. Given my research expertise in the area of biomedical signal processing, nonlinear dynamics, complex systems, artificial intelligence, and time-series analysis, I'm confident in developing a specialized curriculum for students aiming to advance to graduate-level studies.

In summary, the foundation of effective teaching lies in genuinely understanding one's students and meeting their eagerness for knowledge. I am committed to continuous learning, adjusting to industry changes, and keeping pace with evolving research. This dedication guarantees that I provide my students with the excellent education level they deserve, in an environment that is diverse, equitable, and inclusive. As an educator, seeing my students' success in their dream careers is the greatest gift and will always motivate me to give my best for them…