Advancd Design and Fabrication of Prosthetic and Medical Devices

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Dr. Gailani is an associate professor in the Dept. of Mechanical Engineering and Industrial Design Technology. Received his Ph.d in Mechanical Engineering from the City University of New York in 2009. His research work is focused on poroelasticity and its application in biomechanics, additive manufactruring, and medical devices.

Dr. Andy Zhang, New York City College of Technology

Dr. Andy S. Zhang received his Ph.D. from the City University of New York in 1995. He is currently the program director of a mechatronics project in the New York City College of Technology/CUNY. For the past 15 years, Dr. Zhang has been working on bringing mechatronics technology to the undergraduate engineering technology curricula and on helping high school students to learn mechatronics through FIRST Robotic Competition events.

Dr. Yu Wang, New York City College of Technology

Dr. Yu Wang received her Ph.D. degree in Electrical Engineering from the Graduate Center of the City University of New York in 2009. Currently she is a professor in the Department of Computer Engineering Technology at New York City College of Technology. Her primary area of interest includes engineering education, formal methods for modeling real-time systems, digital design, Agile testing, embedded systems, and network protocols.

Dr. Sidi Berri, New York City College of Technology

Sidi Berri earned his master's in mechanical engineering from NYU Poly in 1997 and his Ph.D. in mechanical engineering from NYU Poly in 2000. Dr. Berri has been the Chairman of the Mechanical Engineering Technology Department of NYCCT since 2002. His research areas include vibration analysis, stress analysis, product design, CAD/CAM, and composite materials.

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The department of Mechanical Engineering and Industrial Design Technology (MEIDT) at New York City College of Technology has been working on strengthening the skills of its students in manufacturing and design to respond to the urgent needs of the manufacturing industry in general, and the prosthetic and medical devices (P&MD) industries in particular, to high-skilled engineers and technicians and to provide a national model for advanced technology education. Medical Devices include: (a) Surgical and medical instruments; (b) Surgical appliances and supplies; and (c) Dental equipment and supplies. The educational merit of the project is that it motivates students to do engineering rather than studying engineering. Students get the opportunity to connect classroom experience to the medical device industry through intensive hands on experience in medical imaging and concepts of P&MD. Curriculum is linked to practice so that they can apply what they learn in the classroom in Computer Aided Design (CAD), Engineering Materials, Manufacturing Processes, Computer Aided Manufacturing (CAM), Mechatronics, Tolerance, Product Life Cycle and Management, and Engineering Analysis. Furthermore, the project adopts advance STEM strategies such as Project-based-Learning and best strategies to teach STEM courses by moving from particular experience (design and manufacturing of medical devices) to general experience (design, manufacturing, materials,…etc). Additionally, the project is built on current ATE centers successful strategies to recruit female students to STEM through introducing them to bio-related projects. The technical merit of the project lies in providing students with the opportunity to collaborate with the industry to work in real-life projects.

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