

Job Title: Technical Instructor	Position Title: Technical Instructor, Pappalardo Laboratories
Reports to: Sr. Lecturer, Pappalardo Lab	% Effort or Wkly Hrs: 100%
Department: Mechanical Engineering	Prepared by: Daniel Braunstein/Joanne Mathias
Date: June 2018	Job Code: HR-CB009
Pay schedule: 12 month standard	

Position Overview:

The Technical Instructor, Pappalardo Laboratories will be a member of the full-time Pappalardo Lab team, responsible for design-build-teaching-mentoring activities of the Pappalardo undergraduate teaching laboratories. The approximate 16,000 sq.ft. lab primarily focuses on early-phase prototype processes and fabrication. It has been called a lab, a shop, a makerspace, and an innovation eco-system. The lab houses a variety of manual and NC mills and lathes, metal-working tools, hand tools, 3D printers, a waterjet cutter, laser cutter, thermoformer, and full woodshop – any tool or technique needed to support our undergraduate design and build courses. The facility welcomes ~250 MIT students per semester, and supports a number of special summer programs.

Principal Duties and Responsibilities (Essential Functions):**

- Ensures safe operation of the facility while maintaining a welcoming environment that encourages students to work in the shop.
- Works side-by-side with students and staff to assist with the design and fabrication of their concepts and course projects.
- Will teach lab recitations, as needed, for hosted classes.
- Assists staff and faculty in the teaching, promotion, and execution of laboratory sections, lectures, and demonstrations for classes hosted in the Pappalardo Lab.
- Working with the project technicians in the shop, participates in the maintenance, upgrades and preventative maintenance of all existing equipment in the laboratory and for the installation and training associated with new equipment.
- Provides CAD and CAM instruction to students.
- Facilitates upgrades of equipment, software, and other facility systems.
- Serves as the primary contact to students for digital fabrication – laser, 3D-printing, emerging technology.
- Coordinates outside speakers and events.
- Contributes to the planning for equipment renewal and upgrades.
- Participates in lab social media and promotion activities.
- Additional duties as assigned.

Supervision Received

The position reports to Dr. Daniel Braunstein.

Supervision Exercised

The position co-manages student lab assistants, as required.

Required Qualifications & Skills

- Bachelor's degree in mechanical engineering, manufacturing, design, or related field.
- Minimum of 5 years of experience in a design, modelling, and fabrication-centric organization, i.e. start-ups, shops, product development consultancies, "do-all" early phase engineering/design/fabrication organizations.
- Fluency with CAD (SolidWorks), CAM (MasterCAM/HSMWorks), CNC programming (Prototrak,HSMWorks).
- Experience with a broad array of hand tools, power tools, and machining equipment.
- Experience and expertise in digital prototyping and fabrication: laser cutter, 3D printer
- Experience and expertise in with digital drawing and editing tools such as Photoshop, Illustrator, Premiere, CorelDraw, etc.
- Knowledge of, and some experience with, thermoforming, patternmaking, waterjet cutter.
- Experience developing and implementing training programs that are suitable from new users to advanced users.
- Strong interpersonal skills, including ability to work with faculty and students of widely varying design and fabrication experience, ranging from novice to expert.
- Interest in innovation of fabrication processes, teaching and training practices, and broad dissemination of knowledge.
- Ability to communicate across a broad spectrum of users and stakeholders, including students that are new to fabrication and manufacturing, faculty members and administrators.
- A desire to learn, adapt, and integrate emerging technologies.

** To comply with regulations by the American with Disabilities Act (ADA), the principal duties in job descriptions must be essential to the job. To identify essential functions, focus on the purpose and the result of the duties rather than the manner in which they are performed. The following definition applies: a job function is essential if removal of that function would fundamentally change the job.

For posting:

TECHNICAL INSTRUCTOR, Mechanical Engineering, to be responsible for teaching and mentoring undergraduate students in lab-hosted design & build courses. The facility includes countless hand and power tools, machine tools, a full woodshop, and an assortment of digital fabrication tools, such as 3D printers, laser cutter, and waterjet cutter. This Technical Instructor will assist in the teaching of laboratory sections and lectures, will lead laboratory sections directly, as needed, provide CAD and CAM instruction, train students on equipment use, help develop course curriculum materials, coordinate outside experts for special events, and act as the primary point of contact for digital fabrication and emerging fabrication technologies.

REQUIRED: Bachelor's degree and at least 5 years' experience in a design, modelling, and fabrication-centric organization, i.e. start-ups, shops, product development consultancies, "do-

all” early phase engineering/design/fabrication organizations. Fluency with CAD, CAM, CNC programming, hand-tool use, power-tool use, manual machine tool use, digital fabrication and operation; experience determining the need for and the best means to upgrade and add new equipment and technology; experience developing and implementing training programs suitable for new and advanced users; strong interpersonal and communication skills; ability to work with faculty and students of widely varying experience; interest in innovation of fabrication processes and teaching practices; strong sensitivity to safety issues; and workload and schedule flexibility.