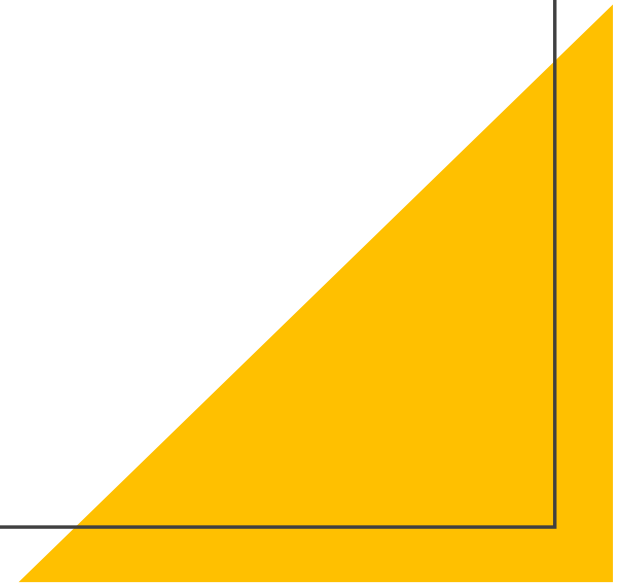


AMICAL Conference 2021

Critical Transition in Library, Technology, and Pedagogy



Enriching Student Learning in Practical-Work Based Courses Using Technology

Dr. Abdullah Bajwa – Assistant Professor (ECE)

Miss. Syeda Areeba Kazmi – IDC, CS-20

June 23, 2021

(Habib University, Karachi)

Practical-Work Based Courses aka Labs



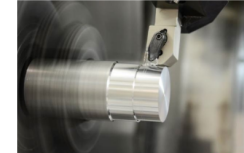
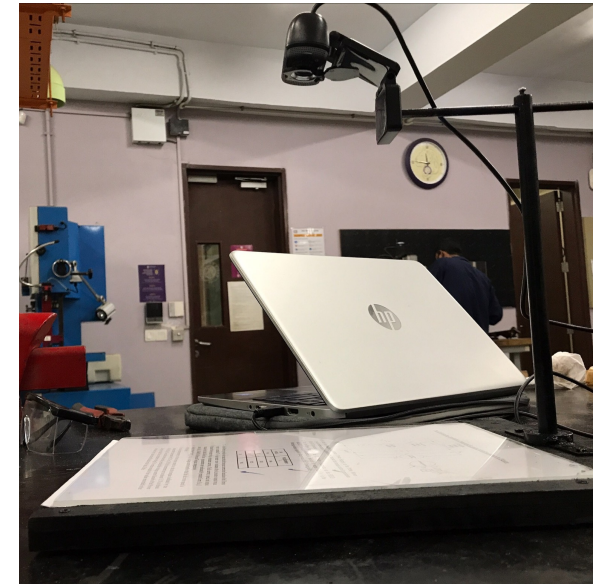
Potential for
Digital
Teaching



canvas



Blackboard®



ENGR 291: Engineering Workshop

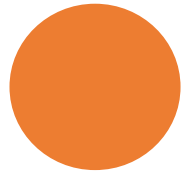
--- Section T-1 ---

Instructor	Abdullah Bajwa (abdullah.bajwa@sse.habib.edu.pk)	
Research Associated	Zeeshan Nafees (zeeshan.nafees@sse.habib.edu.pk)	
Technician	Muhammad Irfan (muhammad.irfan@sse.habib.edu.pk)	
Meeting Times	Tuesday, 8:30 am to 11:25 am	
Meeting Location	Virtually on Zoom until at least Feb 1	
	Meeting Link: https://habib-edu-pk.zoom.us/j/87051166794	
	Passcode: 5b604m	
	After Feb 1 - Engineering Workshop, C-025	
Office Hours	<u>Abdullah Bajwa</u>	<u>Zeeshan Nafees</u>
	4 to 5 pm on Tuesdays & Thursdays	12 to 1:30 pm on Tuesdays and Thursdays at C-025
	Zoom: https://habib-edu-pk.zoom.us/j/82887339393 After campus resumption: C-212	Virtual meetings can be requested if needed

Engineering Workshop and Design

Challenges

- Overcrowded lab spaces
 - Organizational difficulties
 - Low engagement



Introducing LMS

- Improved Organization and Transparency
 - *Workflow is communicated easily / clearly*
- Improved Engagement
 - *Self-paced learning opportunities*
- Better Student Assessment – Learning
 - *Timely and targeted LMS-curated assessments*

▸ Course Project

▸ Week 3: Design Process Lecture + Lab 1 or CAD 2 (refer to respective module)

▸ Lab 2: Metalworking Lathe (Part I)

▸ CAD Session 2: Assembly Modeling

▾ Lab 1: Orthographic Drawing and Band Saw Cutting

▸ Pre-Lab Tasks

[Watch] Lab 1 Overview

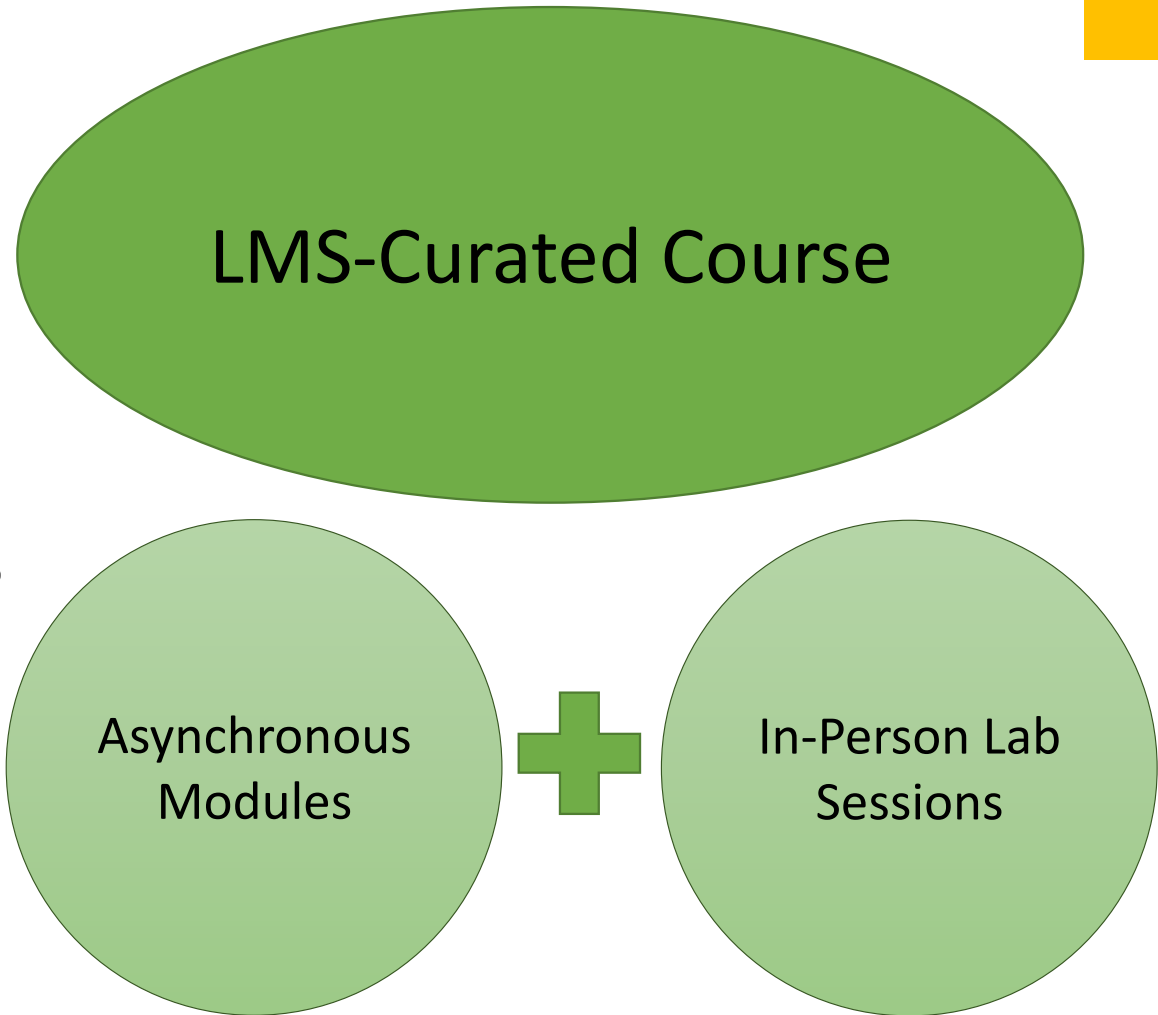
[Read] Lab 1 Manual

[Watch] Introduction to the Band Saw Machine (11 mins)

[Watch] Lab Task Videos (15 mins + 13 mins)

Lab 1 tasks to be submitted in-person

Towards Flexible Labs



Towards Flexible Labs

- Pre-Lab:
 - Manuals via LMS
 - Demonstrations videos
- In-Lab:
 - LMS curated assessments
 - Pre-lab task completion checks
 - Safety quizzes
 - Lab task completion checks
 - Lab report submission
- Lab Session Scheduling:
 - Flexibly in small groups via LMS for supervised , e.g.
 - Students complete 3 labs in 3 weeks at a time and order of their choosing through supervised and independent working slots

Student community

- Ice breaker
- In-person discussions to online chats
- Brainstorming sessions



Student community

- Reading reflections
- Peer-feedback sessions
- Group chats
- Real-time course feedback



Week 1's Reading

Abdullah Umair Bajwa

All Sections

Jan 12 at 3:30pm

3 11



Read the appended mini-case-study and leave a comment discussing what "take-home" message you got from it. (Length of comment < 5 sentences)

Your comments will count for this week's SEL score.

👉 DUE: 24 hours before next week's session 👉



Iqra Siddiqui

Jan 15, 2021

It is very important that the fabricator must understand the design/ designer's intention behind that design, which is possible only through good communication. If there is a communication gap/ understanding gap between the two then it can lead to gigantic accidents and failures of the design. Another important point is that the fabricator should not modify the design on his own and should always inform/communicate with the designer before final implementation of any modification.

↩ Reply 👍



Abdullah Umair Bajwa

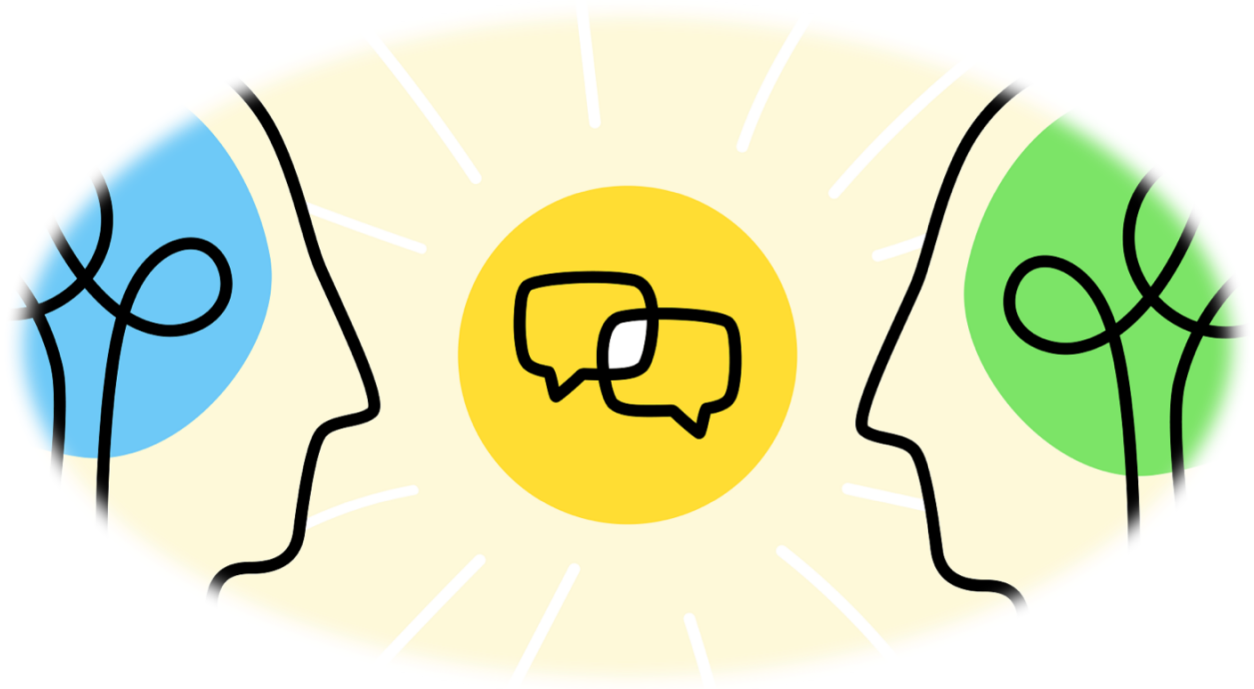
Jan 16, 2021

Both valid observations, Iqra. Good job.

Regarding your first point, I would add that ideally the fabricator / manufacturer should have an idea about what the designer's intent was when they proposed a design *but* that is rarely the case. Therefore, designers while drafting fabrication instructions should make them so clear and unambiguous that the fabricator can accurately implement them even if they do not understand the designer's intention. And as you point out, fabricators should strictly follow the instructions handed over to them by the designers and not change them without consulting the designers.

Collaboration

-
- Student community to instructor community
 - Intra and inter-universities collaborations
 - Cross-course collaboration



Discussion

Can you share some similar experiences where:

- An online platform helped you deliver your course in an efficient way.