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NEWSLETTER

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INTERNATIONAL MULTI-AWARD WINNING INSTITUTION FOR SUSTAINABILITY

LEADING THE WAY
LEADING THE WORLD

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KICT TEACHING & LEARNING EXHIBITION (TALE)

HUMANISING ICT IN EDUCATION
25 SEPTEMBER 2024 | KICT MULTI-PURPOSE HALL

KULLIYYAH OF INFORMATION & COMMUNICATION TECHNOLOGY
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA (IIUM)

KICT TALE 2024
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OCT 2024

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INFORMATION VISUALIZATION

Rationales

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01 Integrate theories with practice: industry tool +tableau

02 Be confident through guidance

03 Emphasize technical proficiency

04 Ethical, Responsible & Accurate data representation

05 Create visualizations that have societal and professional impact

"In this course students are encouraged to explore, create, and iterate, with a strong focus on integrating UI/UX principles into data visualization and storytelling. By incorporating UI/UX concepts, students learn to design visualizations that are not only informative but also intuitive and engaging for the end user, ensuring clarity, functionality, and impact in their data-driven narratives"

From Data to Insights: Crafting Visual Narratives

The teaching approach for this course is rooted in **active learning** and the **application of theory to practice**. It integrates several **pedagogical** strategies:

1. **Lecture-Based Learning**: Provides students with a solid foundation of theoretical principles, including human perception, design, and interaction.
2. **Problem-Based Learning (PBL):** Encourages students to apply their knowledge by solving real-world visualization challenges.
3. **Collaborative Group Work**: Fosters teamwork as students design interactive visualizations and dashboards.
4. **Hands-On Labs:** Students engage in practical sessions using leading industry tools like Tableau to create visual representations from raw data.
5. **Iterative Feedback & Critique**: Students participate in ongoing feedback sessions, learning to refine their work through peer critiques and instructor guidance.

About the course...

Course Learning Outcomes (CLOs)

1. CLO 1: Describe the underlying principles and techniques for effective data visualization and decision-making.
2. CLO 2: Demonstrate the ability to use a structured design process and industry-standard tools to create effective visualizations.
3. CLO 3: Develop interactive visualization systems using storytelling principles to design coherent and impactful visual narratives.

Sustainability

- Curriculum Adaptation
- Ethical Practices
- Real World Relevance
- Sustainable Development
- Improved Critical Thinking
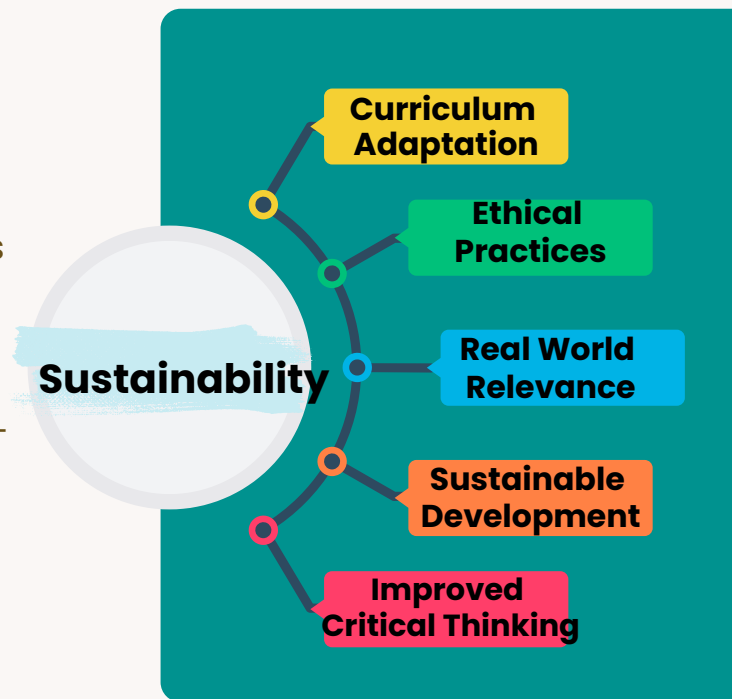
Students explore key concepts such as human perception, visual design, and interactive systems. Through lectures and practical lab sessions, they learn how to develop visualizations that foster informed decision-making. The course also emphasizes ethical data representation, helping students create visualizations that are both insightful and responsible.

Approach + tableau

The course employs a range of pedagogical approaches, including **lecture-based learning** to introduce core visualization principles, **problem-based learning** to tackle real-world datasets, and **collaborative group work** to foster teamwork and diverse perspectives. Students actively use an industry-standard tool such as **Tableau,** allowing them to develop both the **technical skills and storytelling techniques** that enhance the clarity, impact, and ethical use of data.

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Assessment

Assessment is designed to reinforce the learning outcomes through a combination of **quizzes, assignments, lab tests, and a group project**. Quizzes assess theoretical understanding, while lab tests and assignments evaluate practical tool proficiency. The group project challenges students to develop interactive, real-world visualizations, integrating feedback through iterative critique sessions that foster continuous improvement and critical thinking.

Ultimately, my goal is **to inspire students to become adept data storytellers or data designers,** prepared to navigate and contribute meaningfully to a data-driven world.

# Teaching Reflections and Future Vision

The success of the teaching approach is evident in the progress students make from conceptual understanding to mastery of data visualization tools. My commitment to continuous improvement in the classroom involves adapting the curriculum to the latest trends in information visualization and incorporating feedback from students to enhance learning outcomes.

Moving forward, I aim to:

- Integrate More Interactivity
- Expand Ethical Discussions
- Inspire Data Storytelling
- Engage with industries

Students' Involvement

Learning by doing (some examples):

1. **Class Discussion & Activities:** Choosing the right charts for the right data, in class/ via **Padlet**
2. **Assignments - Example: Data-driven Infographic Design Poster**
   a. **Iterative Feedback & Critique:** Students get to _redesign_ the poster, after receiving feedback through peer critiques and instructor guidance.
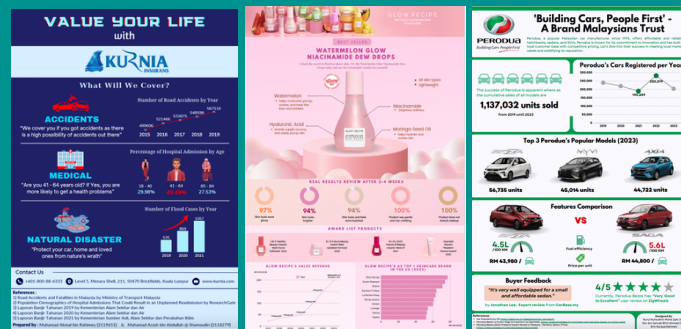
- **Group work - Example: Designing Interactive Dashboard for Business Decision Making**
  - **Iterative Feedback & Critique:** Students design and develop, present, getting peer critiques and instructor guidance to improve their projects.