

Lifelong Learning & New Knowledge Acquisition



Senior Design II

Electrical Engineering and Computer Science
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Preamble

Current World

- One big global community
- Global market
- Knowledge-based economy
- Fast speed of technology change

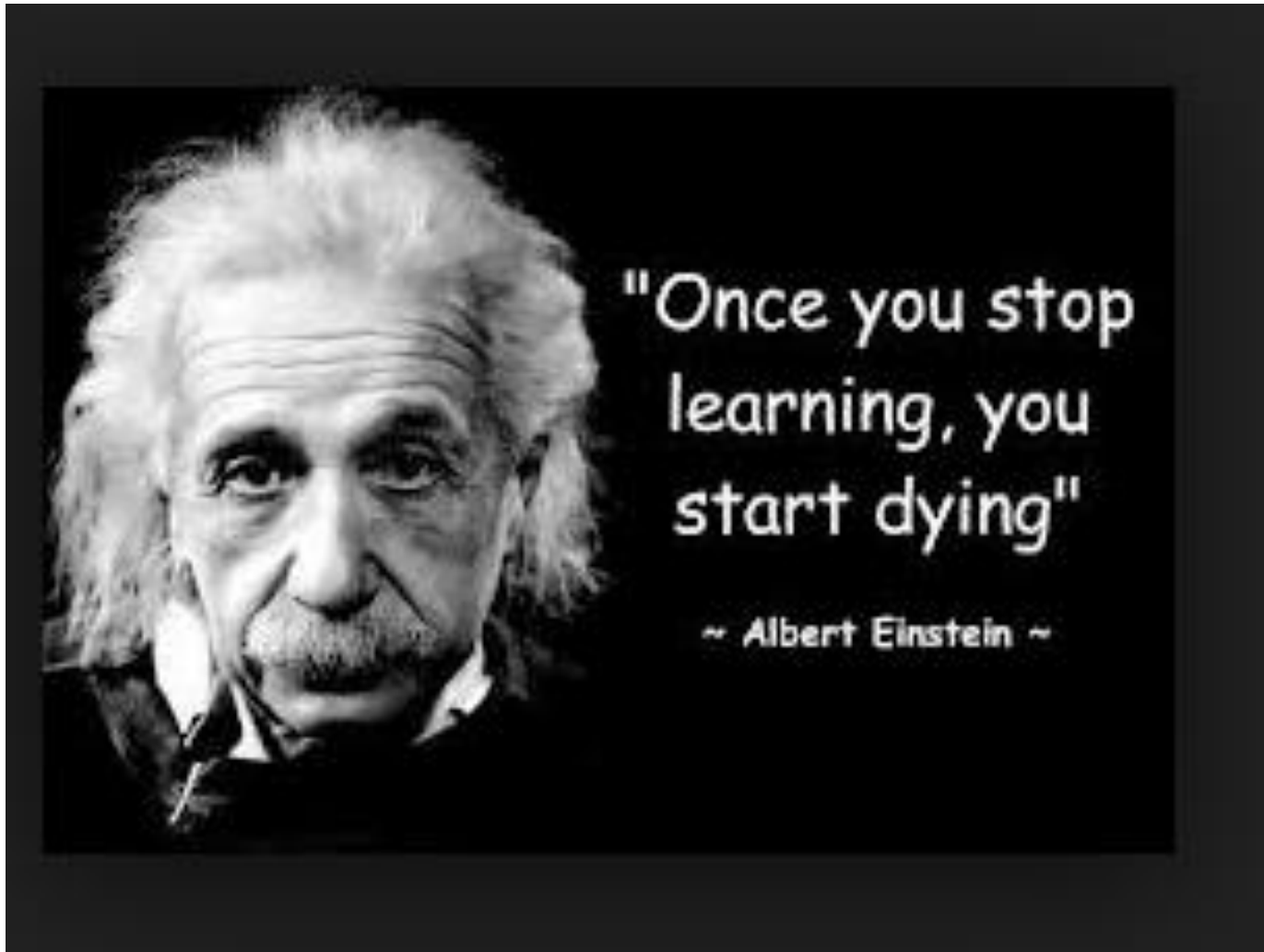
How to live and sustain in the current world

- Continuous pursuit of new knowledge

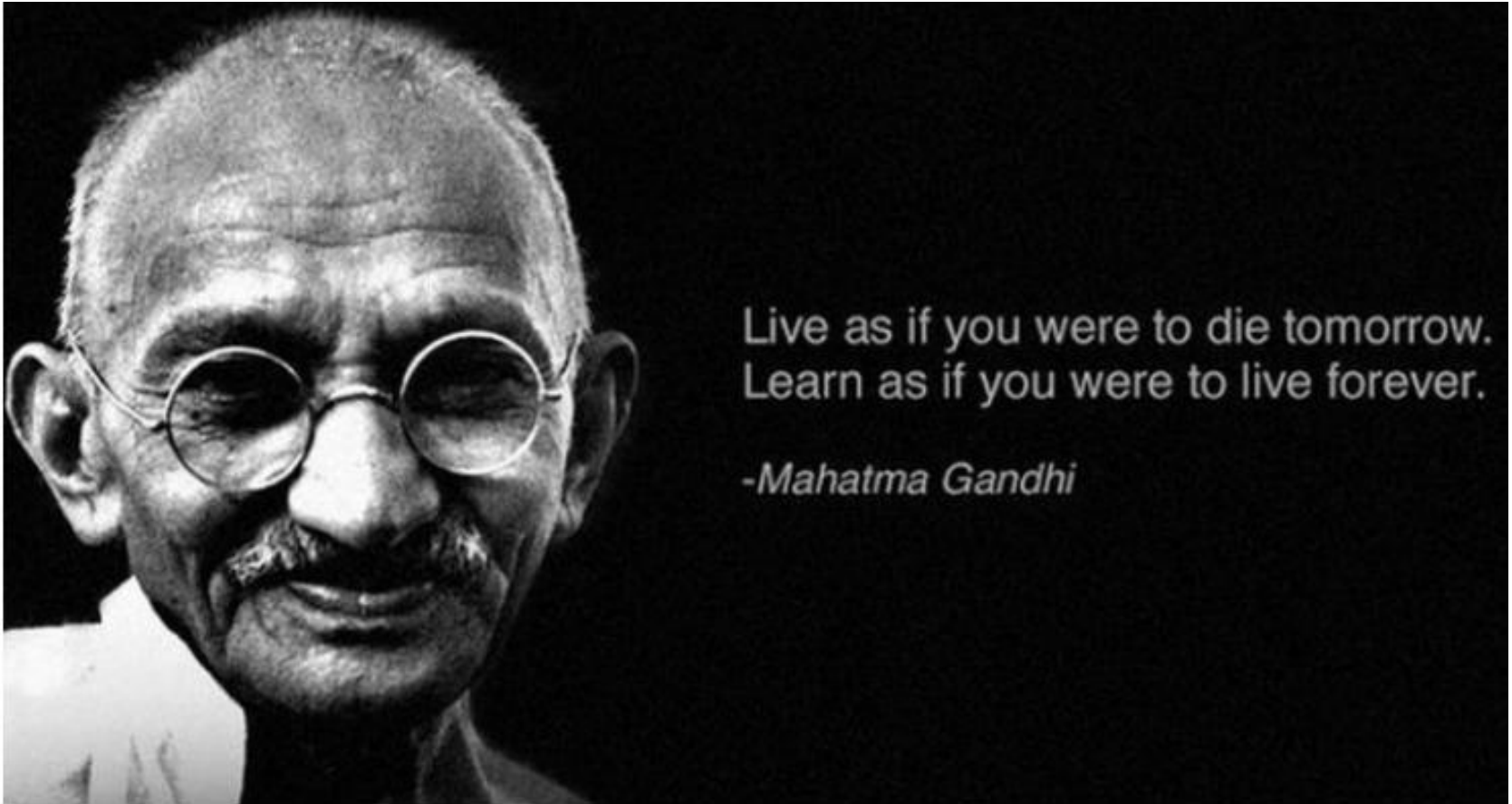
Focus of the class

- Life-long learning & new knowledge acquisition

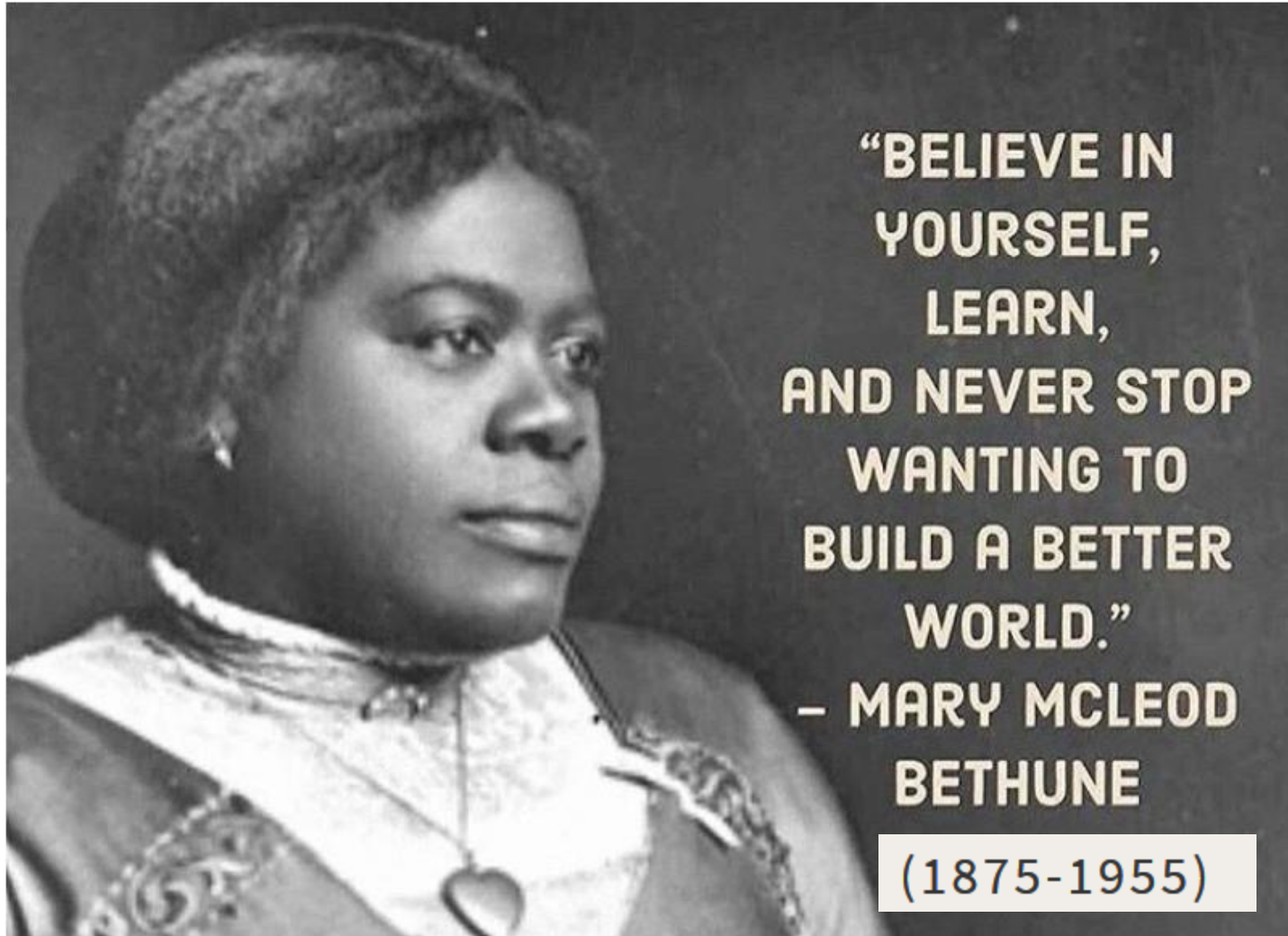
Lifelong Learning



Lifelong Learning



Lifelong Learning



one of the most important educators, civil and women's rights leaders and government officials of the twentieth century.

Lifelong Learning –Why ?

- Voluntary, and self-motivated pursuit of knowledge for the purpose of
 - Personal or professional development in skills and new knowledge
 - Enhancement of active citizenship
 - Enhancement of self-sustainability – competitiveness and employability

Lifelong Learning – How?

- **Boundless Learning**

- Not confined to classroom
- Learning in a range of situations
- **Life-Long:**
 - Learning throughout life
 - Entire life cycle (“from the cradle to the grave”)
 - 24/7 Schooling
 - “Anywhere anytime”
 - Learning in daily interaction with the world around

Life-Wide Learning



Home School



Continuing Education



Job Training

Benefit of Lifelong Learning

■ Individual

- Updated knowledge, skills, values, attitudes, and understanding
- Sharpened mind, interpersonal skills, and career opportunities

■ Community

- Productive and innovative workers

■ Economy

- Stronger economy through the skilled, knowledgeable, and able individuals
- Enhanced life (well-being) for all members

New Knowledge Acquisition

- **Knowledge Acquisition**
 1. Knowledge serves as vehicles for understanding the world
 2. Fundamental process to survival
 3. A process of theory formation and revision (“filling in the knowledge gap”)
- **Strategies for knowledge acquisition**
 1. Strategies of knowledge acquisition vary significantly across individuals
 2. **Practice with the following example**

New Knowledge Acquisition

Example Case:

Darkened gold ring of a bio-chemist

What would cause that?

How do we answer this question?

How do we investigate this question?

New Knowledge Acquisition

- Example Case:
- Darkened gold ring of a bio-chemist
- 1. Strategy:
- 2. Search/Research & Results

New Knowledge Acquisition

- Example Case:
- Darkened gold ring of a bio-chemist
- 3. Facts & Truths Found
- 4. Answer & Reasoning

Knowledge acquisition - assignment

- (Ex1) Which solar panel component is best for a spacecraft orbiting around the earth? (a) Si, (b) GaAs, (c) CdTe, and (d) InP
- (EX2) Someone says that the angle of a solar panel is the same as the latitude of the region. Is she correct? Why?
- (EX3) From 2016, US diplomats and CIA officials posted in Cuba and China began falling ill with headaches, vertigo, memory loss, dizziness, and other symptoms. What happened? Can you provide an expert opinion?

Knowledge acquisition - assignment

- (EX4) I have a 3.3V supply source. But I need 1.8V (Thevenin voltage) with source resistance (Thevenin resistance) 1.5 kOhm. How do I do?
- (EX5) My father tested for a disease and the result was positive. His physician said that this [“positive”] happened with 80% of the people who really had the disease and 10% of those who didn't, and that the disease only affected 1% of the population. Your father said that he should not worry because the likelihood of having the disease was only 7.5%. Is he right?
- (EX6) Some Niobium [Nb] alloys become superconductive at temperatures as high as 18° K. What will happen when very strong magnetic field is exerted to a superconductive Niobium alloy?

Knowledge acquisition - assignment

- Follow the 4 steps
- Assignment topics (Random selection)

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C:\bE2025\TS25\404\NewK>python RandomSelection.py
New Knowledge Acquisition ----- Assignment = EX 4

C:\bE2025\TS25\404\NewK>python RandomSelection.py
New Knowledge Acquisition ----- Assignment = EX 6

C:\bE2025\TS25\404\NewK>python RandomSelection.py
New Knowledge Acquisition ----- Assignment = EX 5

C:\bE2025\TS25\404\NewK>python RandomSelection.py
New Knowledge Acquisition ----- Assignment = EX 1
```

Wk9 - Mar 11	404_5 Life Long Learning and New Knowledge Acquisition - Lecture	Report Form: docx [right-clcik the nsave as] and pdf	New knowledge acquisition - Individual Assignment - due (F) March 28 (8:00pm)
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