



# **Ain Shams University Faculty of Engineering ASU-FE - (Egypt)**

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## Working group

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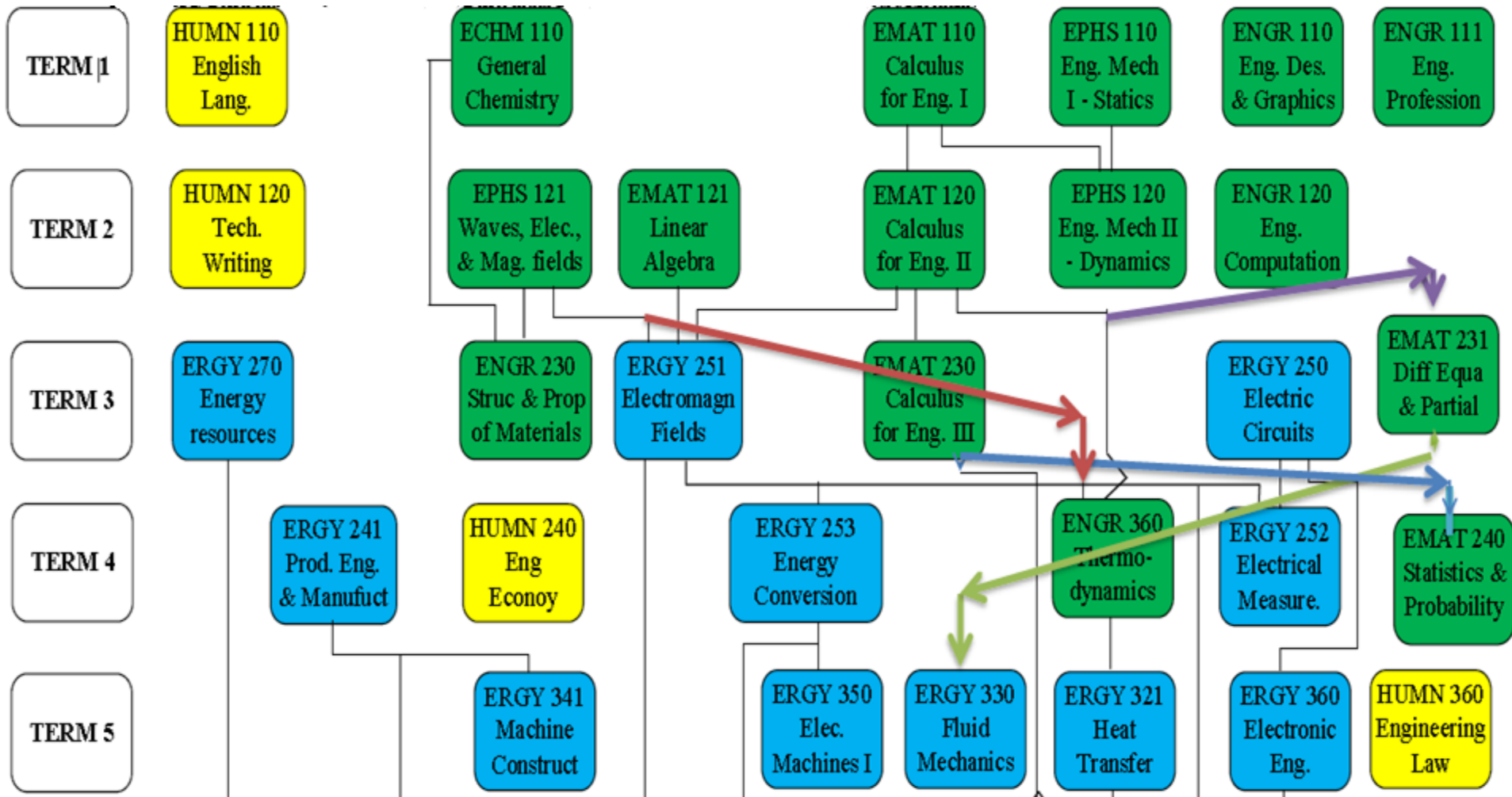
## RE-Program in ASU-FE

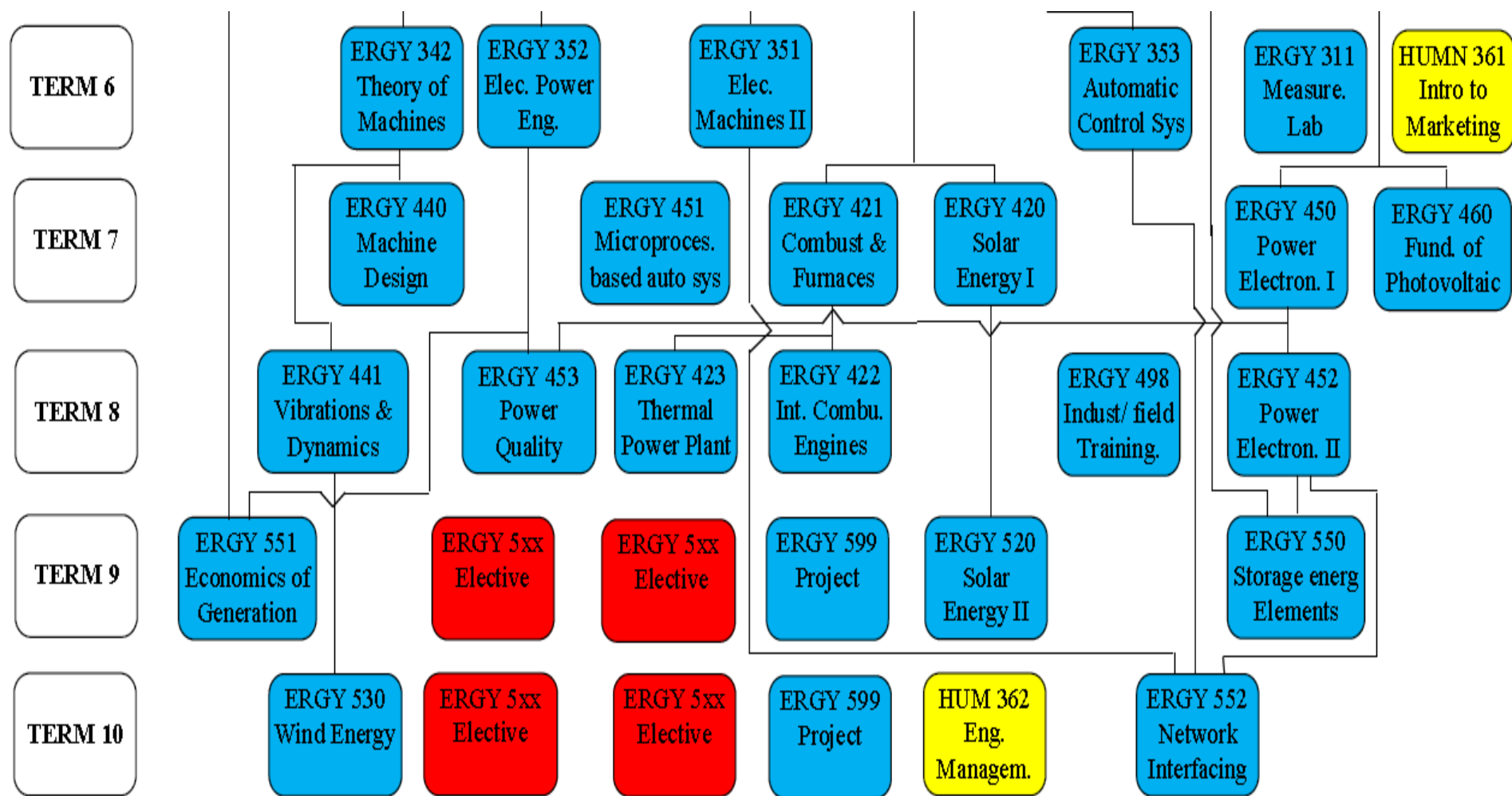
- The undergraduate Energy and Renewable Energy Program had started in 2009.
- The first RE specialization in all undergraduate university-level education in Egypt.
- It incorporates all RE technologies basics, theories, equipment, and applications.

## ASU-FE

- RE program defines the problems and finds appropriate solutions for the effective use of new energy sources in different industrial areas.
- Today, with one group graduated from this program, an evaluation has been conducted to study the achievements and assess the drawbacks.
- **The main future target** is the development of new syllabus based on international standards and link it to the appropriate laboratory experiments

# Present Curricula





# Target Curricula

## Modifying one course syllabus in the Photovoltaic field and add Renewable energy to the Water Resources elective course:

### The PV course syllabus under study is : Solar Energy (1) (3 Credit Hours):

It studies solar thermal energy: Its intensity in outer space and the calculation of the solar intensity on earth with different models. Availability and usability of solar energy. Study of solar angles, Shades and the equation of time. Theory of the flat plate collector, transmission through glass, heat loss calculations and definitions of all parameters involved in collector performance.

- Lecture: 2 hours/week, Tutorial: 2 hours/week

Prepare a laboratory experiment to be used to understand the concepts taught in that course. The required experiment equipment are:

- Four solar panels (250 W each)
- Test solar panel samples of different technologies
- Two measuring solar irradiance devices.
- Lab view software to interface the solar panels with a computer
- A shade analysis software

## Educational Models

- Almost all courses are 3 Credit Hours:
  - Lecture: 2 (most of courses) to 3 hours/week, Tutorial: 0 (does not exist) to 4 hours/week (most of courses are 2), Laboratory: 0 (Does not exist) to 2 hours/week
  - Students' numbers range from 80 to 120 students in core courses, however, elective courses the minimum is 10 students.
- *Most used "tools" are Lecturing*
- *The e-learning platform and web based tools are still under development.*
- *Level of diffusion/use of concept maps*

Rarely used and students will develop them while they are studying.

- *level of diffusion/use of GIS*

It is not used in PV courses but in water resources engineering

- *The education model in ASU-FE is average but working on improving it.*



*(ASU-FE) Hoda Soussa*



