Toward Establishing UNISEC-Egypt:

Space Engineering Education in Egypt

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Outline

• History.
• CanSat Training (CLTP, CLP).
• Activities Timeline.
• Major Outcomes.
• Students Achievements.
• UNISEC-EGYPT.
• The Future.
HISTORY

• Space Education at Cairo University starts officially in 1990 when the department changed from *Aeronautical Engineering* to *Aerospace Engineering*.

• Space Education has a boost around 1994, with the establishment of "Egypt's National Authority for Remote Sensing and Space Sciences".

• Around year 2000, Prof. Sayed Desoky contacts his colleague from Stanford Prof. Twiggs who offers visiting Egypt and teaching us CANSAT technology.

• Unfortunately, the offer was rejected by Egyptian Authorities!
HISTORY

• A remote sensing satellite EgyptSat1 (165Kg, 7.8 m resolution) program started as a cooperation with the Ukraine and was launched on 17th April 2007.
• A team of Aerospace engineers, under the supervision of Aerospace department faculty members, has joined EgyptSat 1 development.
• Different space courses (graduate and undergraduates) where offers through this period such as:
  • Attitude Dynamics and Control, Mission analysis, orbital Dynamics, Space Structures, Space propulsion, etc.
HISTORY

• Different graduation projects were also executed such as:
  • Moon-Sun Sensor, Gas propulsion thrusters, Solar Cells cruse sun-sensor, Mission Analysis software, Orbital propagator, etc.
  • More than 10 master and Ph.D. theses were conducted.

• After stopping of satellite program, space education and research slowed down till three faculty members joined The Japanese Cansat Leader Training Program CLTP.
CLTP

1 Participant from Egypt in CLTP1
2 Participants in CLTP3  •
Total of 3 Participants in CLTP  •
First CanSat Training Program (CTP1)
Second CanSat Training Program (CTP2)
Third CanSat Training Program (CTP3)
**2011 Activities Timeline**

- **Jul**: Deadline for CLTP-2 Application
- **Aug**: Participation in EED
- **Sep**: Announcement about MIC-2 within Egypt and MENA Region
- **Oct**: MIC-2 Regional Seminars started
- **Nov**: Start of CLTP2
- **Dec**: Participation in CLTP2 launch observation and 3rd Nano-satellite symposium
Dr. Ayman Hamdy Kassem, Aerospace Engineering Department, Cairo University

2012 Activities Timeline

- MIC2 Seminars
- Application Deadline For CLTP3
- TEDx Show
- Application Deadline for MIC2
- CLTP3 Start
- Jan-12
- Feb
- Mar
- Apr
- May
- Jun
- Jul
- Aug
- Sep
- Oct
- CTP-II
- AUC Students Competition
- Seminar and Panel Discussion about Establishing UNISEC-Egypt
- Participation in EED-12
2013 Activities Timeline

- CTP3
- Participation Siemens-Middle east competition
- Participation in UN Symposium in Daubi
- Participation in PreMIC3
- Participation in 5th Nano-Symposium
- Participation in RAST 2013 Symposium in Istanbul
- Three capstone projects Affiliated to SSTLAB
- Participation in EED 2013
- Iran Int’l Cansat Competition ICC2013
Major Outcomes

• CanSat allows introducing interesting teaching modules with more design and hardware contents.

• We start getting the best Engineering students in Egypt after changing the stereotype idea of: “Aerospace students are book worms and never have fun”
Major Outcomes

• Advanced Graduation projects:
  • Students get more acquainted with electronics (microcontroller, sensors).
  • They start working on more advanced topics and trying new ideas

Rover Back CanSat  BBM CubeSat  Octocopter
Students Achievements

2011

EED – 1st Place

2012

EED – 1st Place

AUC – 1st Place

2013

EED – 1st Place

3rd IRAN INT’L CANSAT COMP.
7th Place From 150
Outreach

• PortSaid TEDx Session (2012).

• Several TV shows. (2012-2013).
UNISEC-EGYPT

Seminar and Panel Discussion about establishing UNSEC-Egypt (July 4, 2012)
UNISEC-EGYPT

During the first meeting it was agreed that:

- Mailing list was established to disseminate important information.
- To hold a second workshop in 2013 to allow each institute to present its capability.
- Explore the legal issues related to establish NGO UNSEC-EGYPT.
- Due to the current political situation things delayed.
- We are aiming at Alexandria university (the second top university in Egypt after Cairo University)
Future Plan

• Continuing CanSat Education (CTP4, CTP5,....)

• Competing nationally and internationally (EED, ARLISS, MIC, etc.).

• CubeSat (beyond BBM).

• Establishing UNISEC-EGYPT.
Thank you

Ready for Questions