FAT (*Fast Forward, Accuracy, Talent Students*)

Introduction to National Formosa University

- Niche Tech,
- Job Recruitments,
- Faculty exchanges

by Dr. Frank Lin,
Associate Professor
Dept. of Aeronautical Engineering
National Formosa University

About the NFU

National Formosa University in Number

Founded year: 1980

Location: Huwei, Central Taiwan

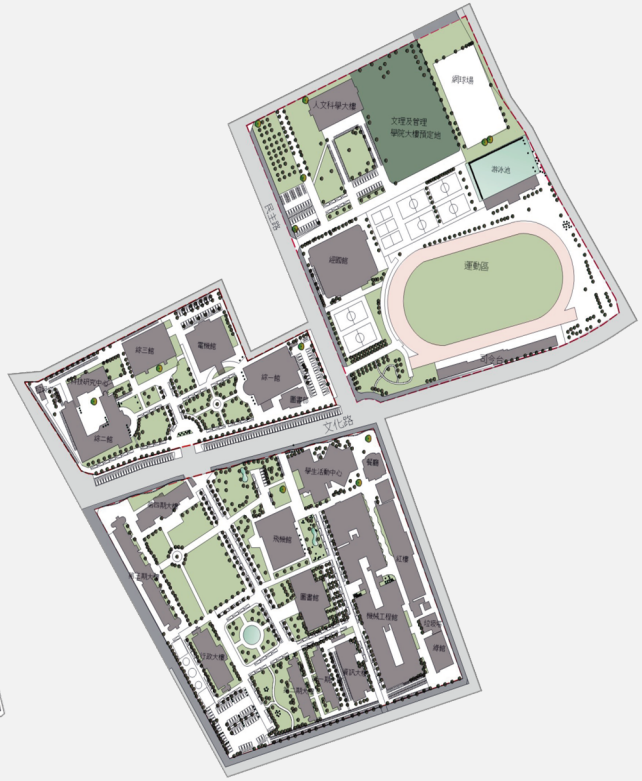
- Faculty Numbers: **327**

Student Numbers:

- Local students: **10,200**
- Foreign students: **135**
- Specialties: **Engineering & Technology**

Campus Map

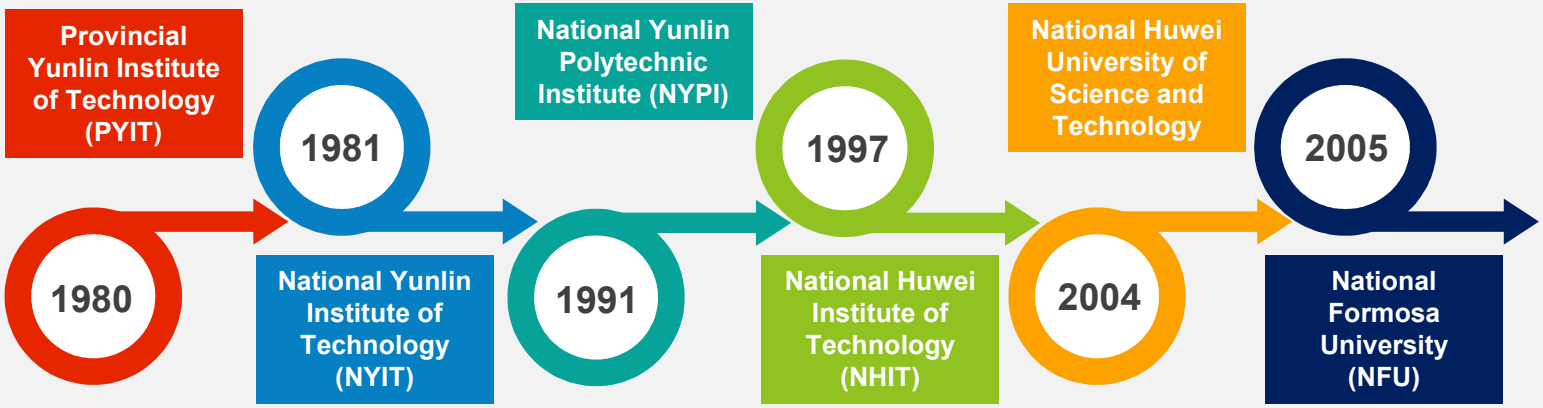
Downtown Campus



New Campus (near THSR Yunlin station)

Dormitory Campus

History and Achievement



Academic Programs

4 Colleges
19 Departments
18 Master's Programs
2 Ph.D. Programs

Engineering
Mechanical and Computer-Aided Engineering
Power Mechanical Engineering (Ph.D.)
Materials Science and Engineering
Mechanical Design Engineering
Automation Engineering
Vehicle Engineering
Aeronautical Engineering

Management
Industrial Management
Information Management
Finance
Business Administration

Applied Arts & Sciences
Biotechnology
Leisure and Recreation
Multimedia Design
Applied Foreign Languages

Elec. & Comp. Engineering
Electro-Optics Engineering (Ph.D.)
Electrical Engineering
Computer Science and Information Engineering
Electronic Engineering

GE Center
LT Center

Center for General Education
Language Teaching Center

International Program
Bachelor Program in Mechatronics
(100% international students)

國立虎尾科技大學
NATIONAL FORMOSA UNIVERSITY

Recent Focuses in NFU

- Industry 4.0 (Productivity 4.0)
- Program for Creativity, Innovation, and Entrepreneurship
- Aviation Maintenance Training Center (AMTC, a Part-147 Training Organization)

About the AMTC in NFU

National Formosa University

Aviation Maintenance Training Center

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Fast Facts

- Perspective of MRO (Maintenance, Repair & Overhaul) Market in Asia-Pacific
- Opportunities & necessities for Part-147 Training Organizations

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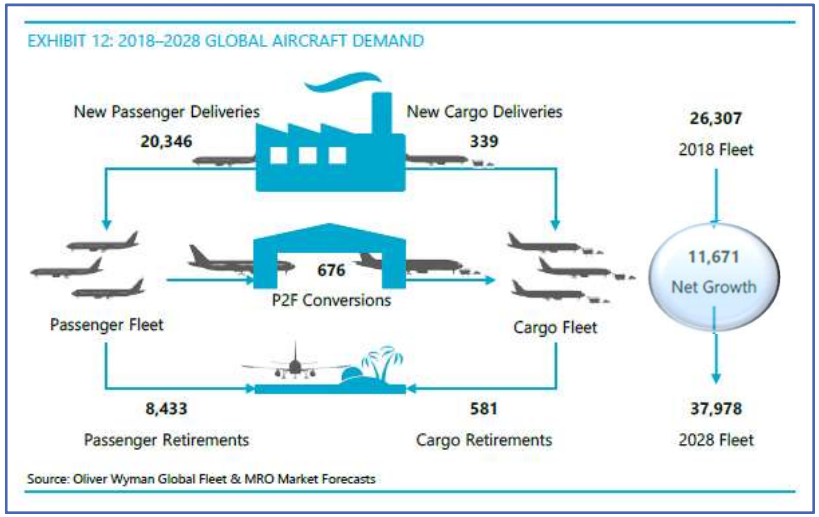

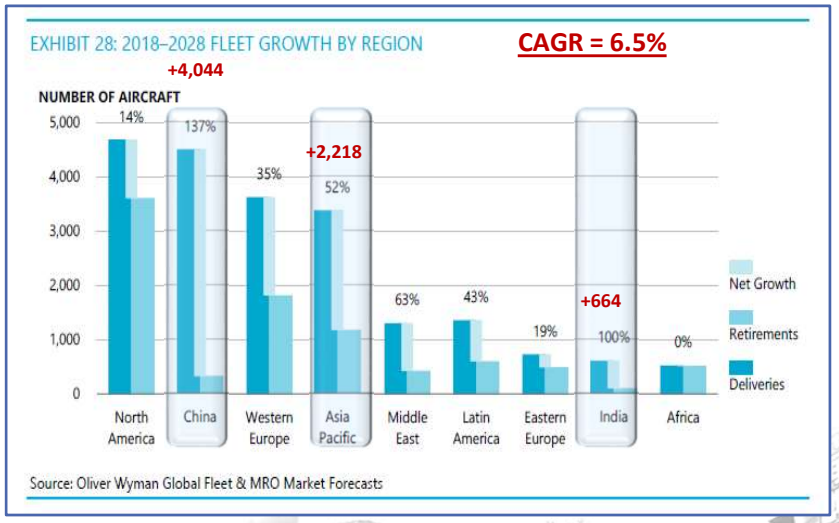

- **Fleet growth in AsiaPac (incl. China & India) will be solid over the next 10 years**
  - ✈ Net fleet growth of more than 6,900 aircrafts **will be increased**
    - ✈ account for 60% of worldwide demands
    - ✈ Cumulative Annual Growth Rate (CAGR) = 6.5%
  - ✈ From industrial experiences, each ACFT will need around 20 technicians for MRO.
    - ✈ Therefore, a *new demand of approximately 138,000 AME's* is expected.

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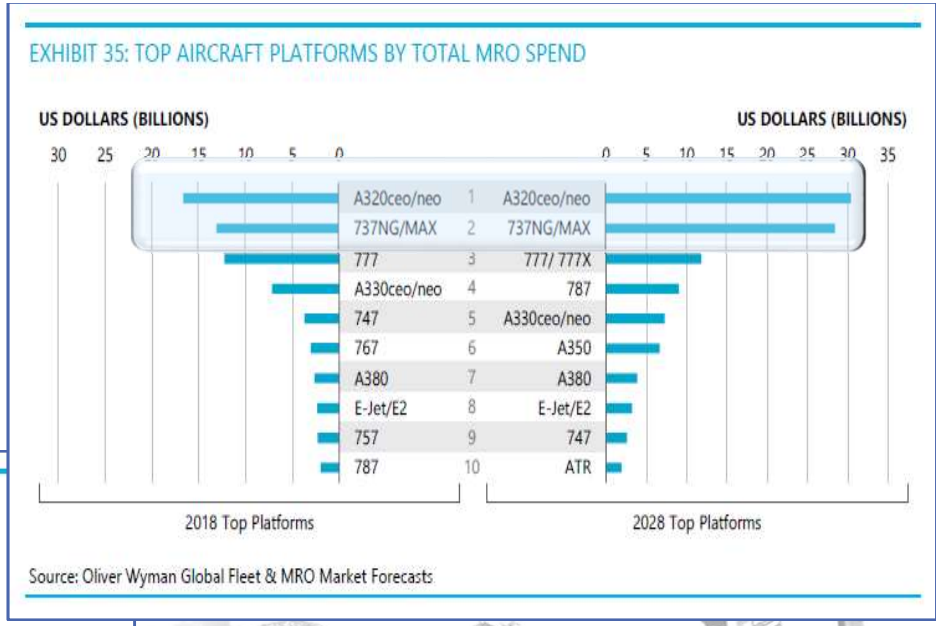
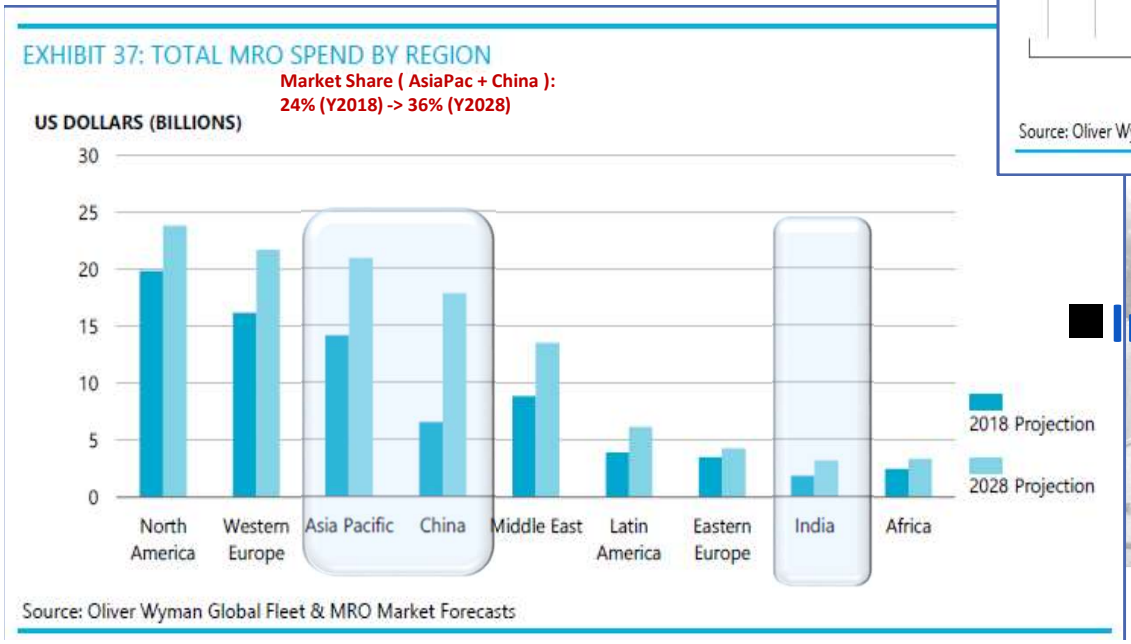
■MRO demands over the next 10 years

- ✈Asia, as has been the case for years, remains the driver of MRO.
  - ✈***Asia Pacific***
  - ✈China





■In Response of market demands:

- ✈EGAT
- ✈TAMECO
- ✈AirAsia

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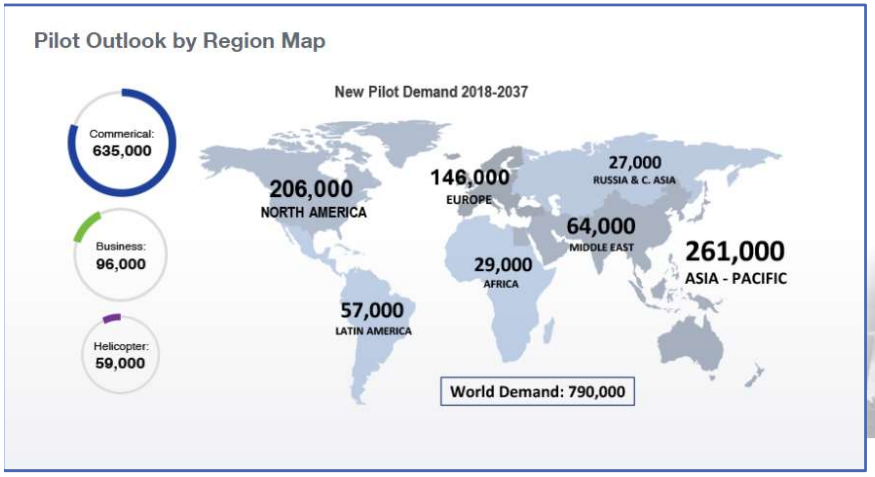
■AME demands over the next 20 years (Boeing)

- ✈The need for AME's is largest in the Asia Pacific.
- ✈Require 257,000 new technicians. (account for 34% of world demand)
  - ✈As airlines continually invest to improve the quality and efficiency of their operations,
    new training curriculums and methodologies will need to be adopted to keep pace with innovation.



Extra demands for pilots maintenance personnel over the next 20 years - Global & AsiaPac regions (Source : 2018 Boeing Pilot & Technician Outlook)

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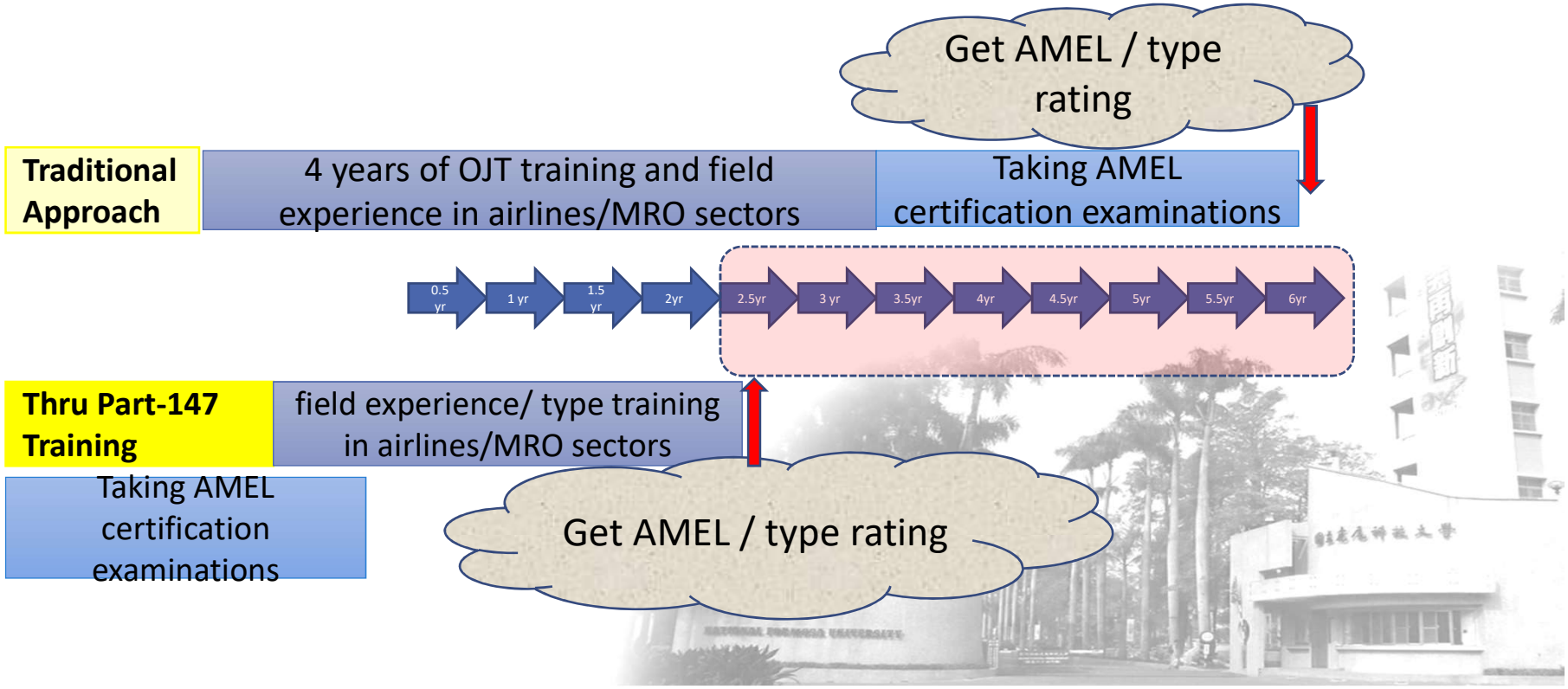
COMPETITIVE EDGE THROUGH PART-147 TRAINING

EASA AME License Certification Process (Cat. B1 License for example)



- 3-4 years of competitive advantage as compared with traditional approach.

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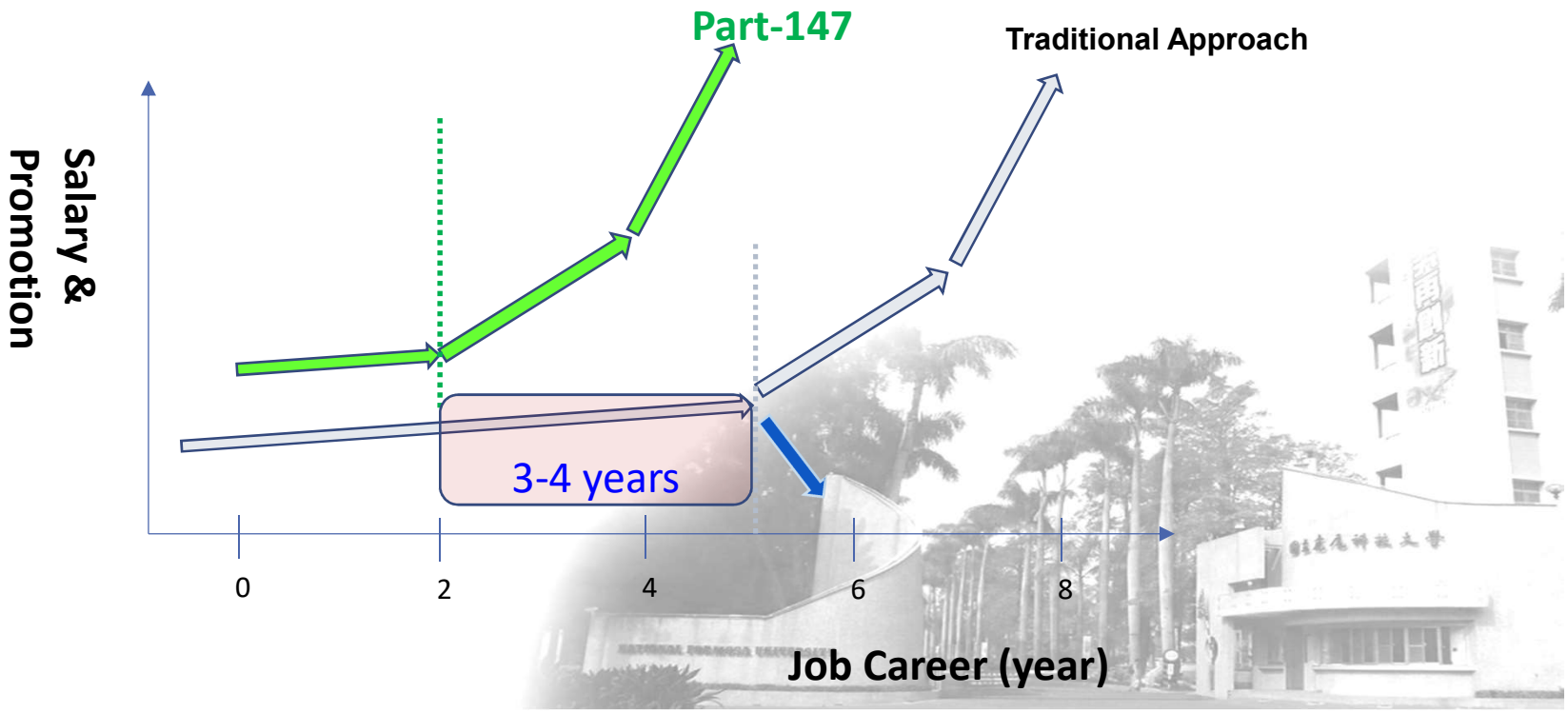
COMPETITIVE EDGE FOR JOB CAREER



Why AMTC?

COMPETITIVE EDGE FOR AMTC

- ***AMTC / Aeronautical Engineering Department (AED)***
  is the first and only state-run university department engaged in Aircraft Maintenance & Engineering .
  - ✈ *AED was established in 1995*
  - ✈ *AED currently enrolls 200+ mechanical/avionic freshmen annually*
  - ✈ *AMTC's Aviation Maintenance Bachelor Degree Program started on 10th Sep., 2018.*
- ***Enjoy high reputation from airlines and MRO sectors in Taiwan.***
  - ✈ *Best employment rate and number of recruits in aviation maintenance industries of our graduates, as compared with all other university departments in Taiwan.*
  - ✈ *Co-operation programs are currently running with major aviation maintenance industries (EGAT, CAL, Air Asia, etc.) in Taiwan.*

■ ***Professional Instructors & Management Staff***

✈ ***Airline Industry Experience***

✈ ***FAA/CAA License***

- ***Infrastructure***

  Our vision and business model are endorsed by Ministry of Education, Taiwan.

  Continuous project grants are supported

  *to **establish an MRO-class infrastructure of training environment**:*

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The Way We Operate

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MODEL 1 : BACHELOR DEGREE PROGRAM

Aviation Maintenance Degree program

- 2-year program: Junior – Senior students
- 2,400 training hours (Authority-approved Cat. B1.1 Basic Training Course)

中華民國交通部民用航空局
Civil Aeronautics Administration, MOTC, Republic of China
民用航空人員訓練機構許可證
Approval Certificate of Civil Aviation Training Institute
證號 CAA 147-2019-001
Reference Certificate Number: CAA 147-2019-001

機構名稱：國立虎尾科技大學附設航空維修訓練中心
Name of Training Institute : National Formosa University
Aviation Maintenance Training Center

機構地址：63201 雲林縣虎尾鎮文化路 64 號
Training Institute Address : No. 64, Wenhua Road, Huwei Town, Yunlin County 63201, Taiwan, R.O.C.

負 責 人：劉昇祥
Training Institute Accountable Manager: Liu, Shen-Hsiang

經查所設航空維修訓練中心符合民用航空人員訓練機構管理規則第 14 條及第 47 條規定，許可登記辦理航空維修訓練，課程分類如下：

The Civil Aeronautics Administration (CAA), Republic of China has inspected the above Training Institute in accordance to the Regulations Governing Administration of Civil Aviation Training Institutions – Article 14 and Article 47, and approval has been granted to the above Training Institute to perform Aircraft Maintenance Training as follows:

1. 檢定訓練課程 / Certificated Training Program
   B1 類基礎訓練 / Category B1 Basic Training

民用航空局 局長
Director General Of CAA

發證日期：2019 年 2 月 22 日
Issued Date: 22th / February / 2019

有效期限：2021 年 2 月 21 日
Expired Date: 21th / February / 2021

印製日期：2019 年 3 月 5 日(初)
Printed Date: 5th / March / 2019

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COURSES MODULE LISTING (CAT. B1.1)

Module	Subject	Training Hours		
		Theory	Practice	Sum
1	MATHEMATICS	36	0	36
2	PHYSICS	54	0	54
3	ELECTRICAL FUNDAMENTALS	54	39	93
4	ELECTRONIC FUNDAMENTALS	36	15	51
5	DIGITAL TECHNIQUES ELECTRONIC INSTRUMENT SYSTEMS	36	36	72
6	MATERIALS AND HARDWARE	216	216	432
7A	MAINTENANCE PRACTICE	360	288	648
8	BASIC AERODYNAMICS	36	0	36
9A	HUMAN FACTORS	18	12	30
10	AVIATION LEGISLATION	36	12	48
11A	TURBINE AEROPLANE AERODYNAMICS, STRUCTURES AND SYSTEMS	324	270	594
15	GAS TURBINE ENGINE	144	108	252
17A	PROPELLER	36	18	54
	TOTAL TRAINING HOURS :	1,386	1,014	2,400
	Ratio :	58%	42%	100%

DEGREE PROGRAM

National Formosa University
Aviation Maintenance Training Center

Freshman Sophomore **Junior** **Senior**

Common- and college-required courses 56 credits

Professional courses conducted before the degree program

(credits admitted)

Other selected courses

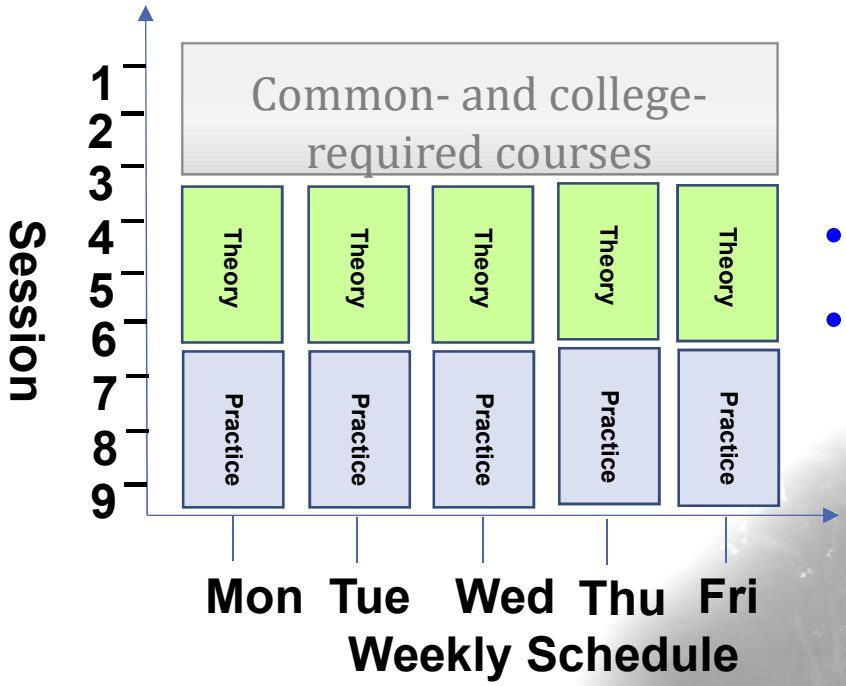
Theoretical Core Courses - 65 credits
(about 1,300 training hours)

Practical Core Courses – no credits
(about 1,100 training hours)

B.S. Degree
(128+ credits)

Part-147 Certificate of Recognition

COURSE SCHEDULE



- 30 hours each week
- 20 weeks each semester

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MODEL 2 : CUSTOMIZED TRAINING

- Approved Basic training courses
  (CAA-approved Certificate of Recognition is issued)
  - Part-66 Cat. B1.1 basic training (2,400 training hours)
  - Particular module(s) of the above basic training courses.
- Customized maintenance training courses
  - General familiarization of specific maintenance subjects.
  - MPD training
  - Specific ATA chapters of aircraft systems
- Advanced training courses on airline operations
  - Aircraft acquisition cost evaluation
  - Aircraft leasing / leasing agreement

中華民國交通部民用航空局
民用航空人員訓練機構許可證
核發 CAA 147-2019-001
機構名稱：國立虎尾科技大學附設航空維修訓練中心
Name of Training Institute: National Formosa University Aviation Maintenance Training Center
機構地址：63201 雲林縣虎尾鎮文化路 64 號
Training Institute Address: No. 64, Wenhua Road, Huwei Town, Yunlin County 63201, Taiwan, R.O.C.
負 責 人：劉昇祥
Training Institute Accountable Manager: Liu, Sheo-Hsiang
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民用航空局 局長
Director General Of CAA
林國顯
發證日期：2019 年 2 月 22 日
Issued Date: 22th / February / 2019
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Part-147 Certificate of Recognition

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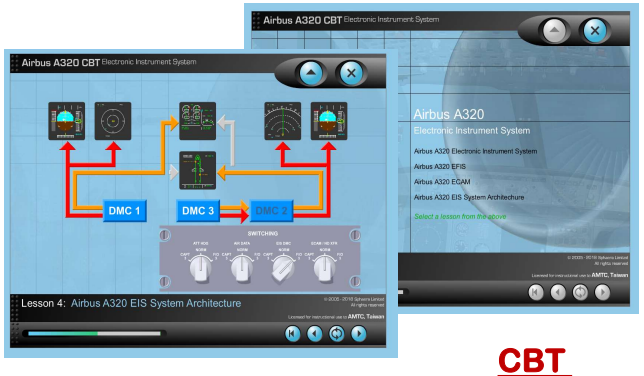
TRAINING MATERIALS

EASA Part-66 standard textbooks / e-books



CBT

On-Line Exam mgmt. software

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CLASSROOMS EXCLUSIVE COURSE AIDS

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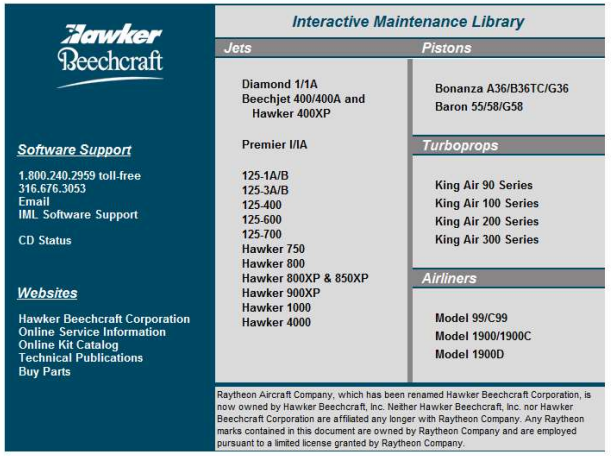
LIBRARIES



On-Line
Interactive Maintenance Library

Reference Documentation
Look-up Corner in NFU Library

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TRAINING AIRCRAFT

Dornier Do-228

Beech Kingair-350

T-39

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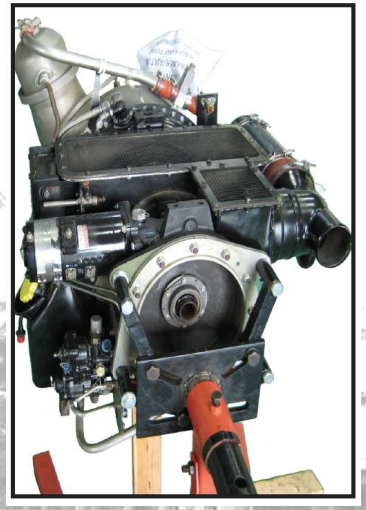
ENGINE / APU



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A320 AIRCRAFT SIMULATOR (B738 IN PURCHASE)

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HANGAR AREA

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WORKSHOPS

Maintenance Practice Workshop

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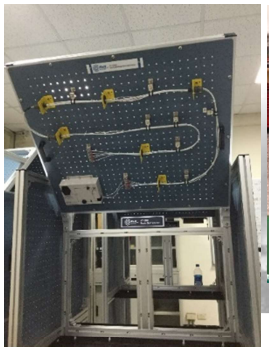
WORKSHOPS



Avionics Workshop

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HAND TOOLS

Instructor's tool set

Student's tool set (one set for each student)

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GROUND SUPPORT EQUIPMENT

Ground Power Unit

Air Compressor

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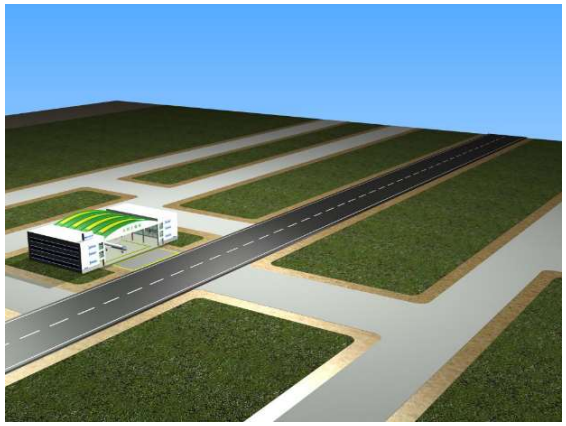
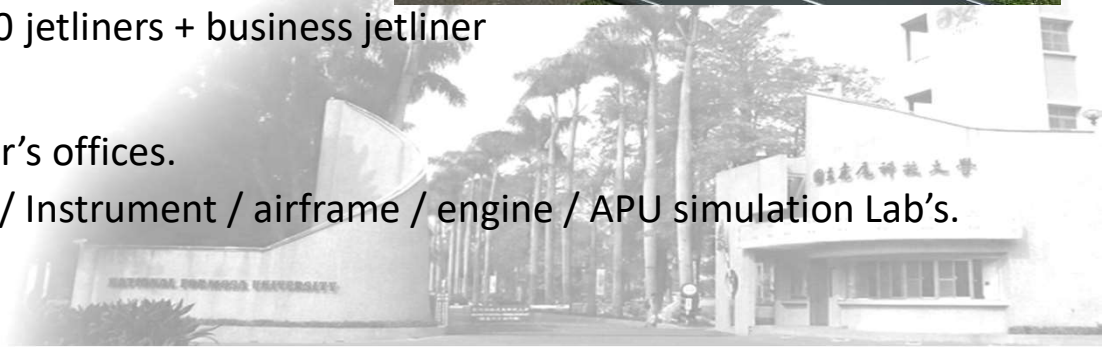
From A to A+

AMTC Training Hanger (Sep. 2021)



- 2000 m^2 maintenance hangar
  - Accommodate 1-2 A320/B738/MD-80 jetliners + business jetliner
  - Taxi runway & apron
- 24-48 classrooms / workshops / instructor's offices.
  - Industrial-class Electrical / Electronic / Instrument / airframe / engine / APU simulation Lab's.
  - Composite material repair workshop
- A320 & B737-800 NG simulators
- Virtual Maintenance trainer



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Our Vision

- Committed as a Part-147 training organization of innovation and excellence in Asia
  - Apply EASA Part-147 certification
  - Provide local and on-site maintenance training services
  - Cooperate with partners and expand our filed of training.

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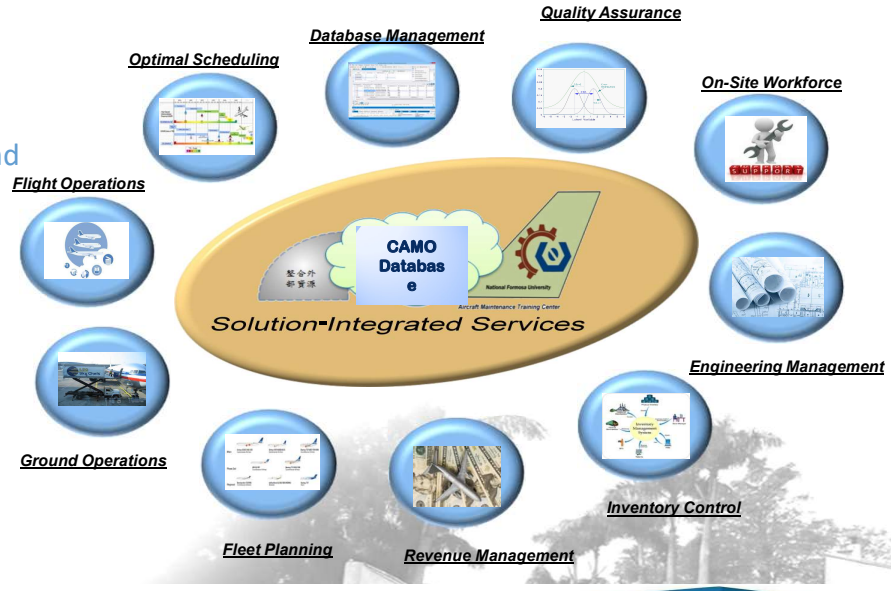
Our Vision

- **Spin off and start up an aviation management organization**
  - Cooperate with partners and integrate the resources of
    - CAMO
    - Aircraft Acquisition
    - Flight Ops
    - Maintenance Support
    - Material Support
  - Provide a one-stop shop total support for airlines in ASEAN countries.



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Tuition Fee and Living Cost

- Tuition: (Cat. B1.1) (full 2yrs program)
  est. USD$25,000. /per student
  - 2,400 training hours (theoretical + practical)
  - shop visits at airlines/repair stations
  - colored copies of textbooks & course materials
  - exclusive lap-top device for each trainee during class.
- Tuition rate (for customized training)
  est. @ USD$2,500 /per hour
- Living Cost: est. USD$8,000 (2yrs) (@Taiwan)
  - Including food, dorm, local transportation and medical insurance.
- For on-site trainings
  - Per Diem = USD$150 daily
  - Air fare (Premium Economy Class)

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Thank you.