

My CLTP15 Experience

**Ali Al-Humairi,
GUtech**



Agenda

- **GUtech**
- **Memorable or Valuable Experience during CLTP15?**
- **Learn or Gain from the Program?**
- **Apply CLTP15 experience to future work or activities?**

GUtech



Academic Programmes

Bachelor Programmes:

1. BSc Applied Geosciences
2. BSc Urban Planning and Architectural Design
3. BEng Mechanical Engineering
4. BEng Process Engineering
5. BEng Environmental Engineering
6. BSc Logistics
7. BSc IBSM
8. BSc Computer Science
9. BSc Cyber Security
10. BSc Artificial Intelligence

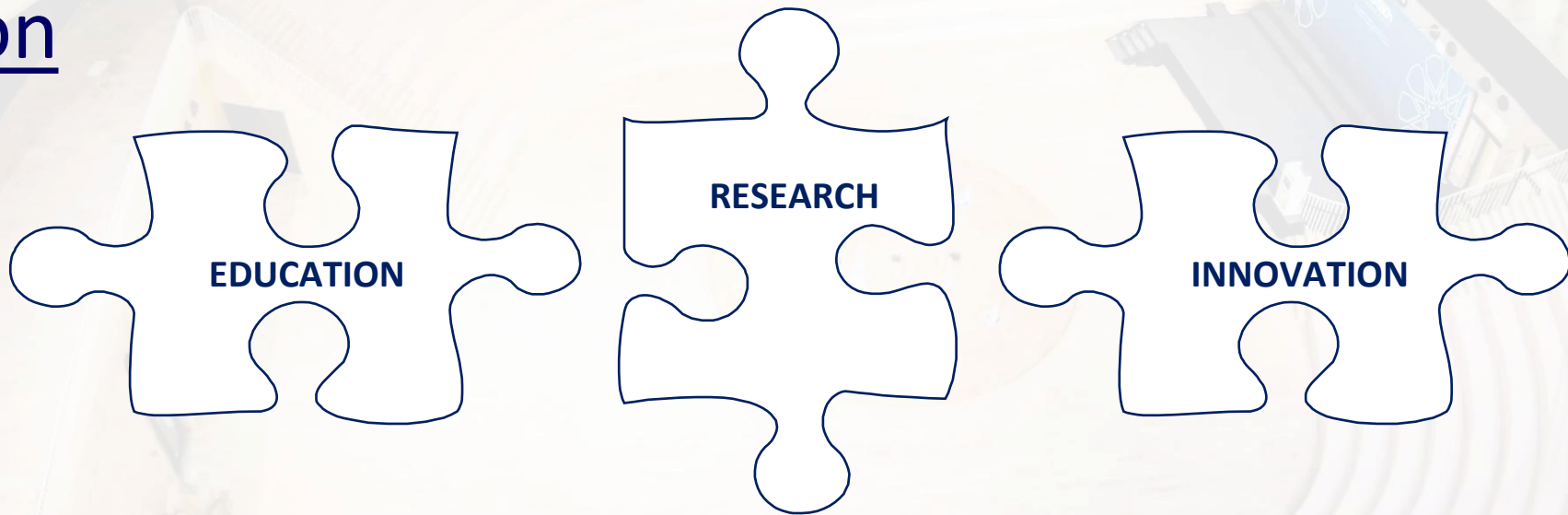


Postgraduate Programmes

- ❖ Master of Science in Applied Geosciences
- ❖ Master of Science in Computer Science
- ❖ MEng Industrial Production and Manufacturing
- ❖ MSc Degree of Science in Architectural and Urban Planning
- ❖ MSc Degree in Hydrogen Economy & Technologies
- ❖ "Double Degree MBA - GUtech-WU Master in Business Administration"
- ❖ PhD in AGEO

GUtech will strive to become a leading university of technology in the wider region, thus defining the highest standards in teaching, research and innovation

GUtech Vision



- Combining teaching and research
- German standards with a firm grounding in Omani heritage
- Interaction with industry

About the Trainer: Eng. Ali Al Humairi

Senior Lecturer

NetAcad Lead – GUtech Cisco Networking Academy

Consultant, Oman Society of Engineers (OSE)

Senior Member, IEEE



He has joined a Ph.D. program in Communication Engineering at Duisburg-Essen University. He holds a BSc. Degree in Computer and Software Engineering.

Supervised many projects in education, embedded systems, smart automation, solar and renewable energy, and IoT at Koblenz-Landau University, Duisburg-Essen University, and GUtech.

- He initiated the Solar PV projects at GUtech in 2017 and has led the Solar PV R&D since then.
- Smart Automated Irrigation System project won first place in the Dell-EMC Competition.
- “Solar Panel Efficiency in Oman” project won the GHEDEX prize in 2024.
- In 2025, the Solar Project also won the Governorate Star Recognition Award.
- Consultant, Oman Society of Engineers (OSE).
- Solar PV Certified
- Siemens Instructor Certified
- CLTP Instructor Certified
- Senior Member, Institute of Electrical and Electronics Engineers(IEEE)

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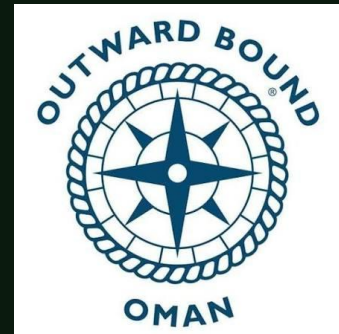
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Ali Al Humairi
Institutional and Industry Partnerships



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• Instructor Certificate

Instructor Certificates

- CanSat/CubSat Leader Training Program (CLTP15), University Space Engineering Consortium (UNISEC), Japan.
- Siemens Mechatronic Systems Certification Program (SMSCP) Instructor Certification: Level 2 (SMSCP-L2), Germany.
- Siemens Mechatronic Systems Certification Program (SMSCP) Instructor Certification: Level 1 (SMSCP-L1), Germany.
- Siemens Mechatronic Systems Certification Program (SMSCP) Instructor Certification: Systems Approach Paradigm Week (SAPW) (SMSCP-SAPW), Germany
- Global Instructor Professional Development (IPD) Week, Cisco Networking Academy, CISCO.
- Instructor Professional Development, Cisco Networking Academy, CISCO.
- TOT Training Diploma, IBS Training Academy



Emerging Technology Certificates

- International Graduate School on Mobile Communications, University of Technology Ilmenau, Germany.
- Cybersecurity course, Cisco Networking Academy, Cisco, Germany
- IoT
- Mobility Fundamentals Series: Troubleshooting Wireless LANs, Security, Wireless Router and Clients Configuration, BYOD
- Computer Networking: Beyond Routing & Switching, Cisco Networking Academy, Cisco, UAE
- Cloud Computing, Cisco Networking Academy, Cisco, UAE
- Get Connected, Cisco Networking Academy, Cisco, Singapore
- Cisco Packet Tracer, Cisco Networking Academy, Cisco, Singapore



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- **Instructor Certificate**

Solar Certificates

- PV Systems - Tools and Techniques for Operations and Maintenance, SEI, USA.
- PV203: Fundamental of Battery-Based Solar PV Systems, SEI, USA.
- Fundamental Math for Solar Applications, SEI, USA.
- Introduction to Renewable Energy, SEI, USA
- PVsyst & Helioscope for PV System Production Modeling, SEI, USA.
- PV201L: Solar Electric Lab (Grid - Direct), SEI, USA.
- PV101 Photovoltaic Training Course, SEI, USA.

Energy Certificate

- Energy Efficiency and Energy Management, GEN Europa, Ireland.

UNICEF Certificate

- Designing an Overarching Framework for Youth Programmes in Oman, UNICEF



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Awards

1. Best Team Award, Nihon University and University Space Engineering Consortium (UNISEC), Japan, 2026.
 - Solar Satellite Design..
2. Best Paper Award, 13th International Conference of Control, Dynamic Systems, and Robotics (CDSR 2026), Spain, 2026
 - Paper Title: Design and Implementation of a Control System for Solar Cleaning Robot
3. Oman Sustainability Award, 2026
 - ESG Category- Bronze
4. Shell Eco Marathon, Qatar, 2026
 - First Omani team after COVID-19 to pass both inspections across all categories, including electrical and combustion engine.
 - First Omani electric vehicle to pass the Technical Inspection.
 - First Omani electric vehicle to pass the Safety Inspection
5. Governorate Star Recognition Award, 2025.
 - Solar Cleaning Robot Project.
6. GHEDEX Award, 2024
 - The Solar Projects.
7. Annual Science Fair, National University, Oman, 2023
 - Second Place, Modern World and Artificial Intelligence.

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Awards

8. COMEX, 2022

- First place University projects, ERP System.
- First Place, Pharmacy Alarm System.

9. Solar Decathlon, Oman.

- Third Price, 2022
- Third Price, 2021.

10. Sandan Competition, 2019.

- First Price, Drone Project

11. Al Roya economic Award 2019.

- First Price in the Category of best Project, Plasminum Collector Machine .

12. Dell-EMC Envision the Future Competition in the Middle East, Turkey, and Africa region, 2018.

- First Place, Automated Irrigation System.

13. Bank Dhofar “Tech Mind” contest, 2018.

- Second Place, PayLink Team

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Awards

14. Eighth Information Technology Festival, SQU, 2018.

- Second Place, Smart Weather Project.
- Third Place Smart Irrigation Project

15. 13 Chemical Engineering Gathering event from the Society of Chemical Engineering, SQU, 2018.

- Third Place, Hydrogen Car Team.

16. Electronic Chemical Competitions SQU, 2018

- Fourth Place, Hydrogen Car Team

17. Alroya Award for Youth Initiatives, 2018.

- Third Place, Hydrogen Car Team

18. Microsoft Imagine Cup, USA

- First Place in Oman
- First Place in Arab,
- Eighth Place in Worldwide, 2017.

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Projects

1. **AI-Powered Photovoltaic (PV) Cleaning Robot, Partner Duisburg Essen University - Germany, Funded by TRC, 2026.**
2. **Indoor Solar Cleaning Robot Optimization, Partner Duisburg Essen University - Germany, Funded by Oman LNG, 2024-2026**
3. **Building the Three-Step Mastery Cycle (3SMC) Adaptive Learning App to Improve Mathematics Outcome, Funded by TRC, 2026.**
4. **Investigating the Impact of Wireless Network Delay on the Event-based Adaptive Filtered Predictive PI controller for Wireless Sensors Networks, (Funded by GUTech) 2026.**
5. **Predicting Photovoltaic Cleaning Schedules, Partner Duisburg Essen University-Germany, Funded by Duisburg Essen University, 2026.**
6. **AI Solar Robot Project, Partner Duisburg Essen University - Germany, Funded by Duisburg Essen University, 2026.**
7. **Shell Nawafidh Program, Funded by Shell, 2022-2026**
8. **VR MyScore Computer Science Lab, Partner RWTH Aachen, Funded by RWTH Aachen, 2023 – 2026.**
9. **Cisco Networking Academy, Partner CISCO, 2017-2026.**
10. **Indoor Testing Solar Cleaning Robot, Partner Duisburg Essen University - Germany, Funded by OQ, 2024 & 2025.**
11. **Modelling Solar Project, Partner Duisburg Essen University – Germany, Funded by Electronics, Switzerland, 2025.**
12. **Solar Cleaning Robot, Partner Duisburg Essen University – Germany & DAP - Oman, Funded by OQ Accelerator, 2025.**

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Projects

13. LS Project, Partner OBO, Funded by OBO, 2018-2025

14. Graduation Projects, Funded by BP Oman, 2025.

15. AI Solar Project, Partner Duisburg Essen University - Germany, Funded by Duisburg Essen University, 2025.

16. Clean Energy Generation from Wave Pressure and Solar Energy, Funded by Ministry of Higher Education, Research & Innovation Fund, 2025

17. Solar Cleaning Robot, Partner Duisburg Essen University – Germany, Funded by Process, Switzerland, 2025.

18. Solar Project, Partner Duisburg Essen University - Germany, Funded by Duisburg Essen University, 2025. .

19. Innovative Hybrid Mobile Green Generator System: A Sustainable Solution for Clean Energy Generation, Funded by TRC, 2025.

20. AI in Autonomous Driving Vehicles, Funded by TRC, 2025

21. Green Hydrogen Production from Desalination Brine using Solar Energy and Electrolysis, Funded by TRC, 2024

22. Green Hydrogen Production Optimization, Funded by TRC, 2024

23. Investigating the Impact of Gamification on Education in Oman, Funded by TRC, 2024

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Projects

24. Optimization and Performance Testing Calibration of An Autonomous Solar Cleaning Robot, Partner Duisburg Essen University - Germany, Funded by GUtech, 2023.
25. Investigating the Impact of Gamification in Education in an International School in Oman: An Analysis of Students, Teachers, Partnership with Klagenfurt University - Austria ,Funded by the EdMedia + Innovate Learning - Austria, 2023.
26. Indoor Navigation, Funded by TRC, 2022 & 2023
27. Smart Solar Robot, Partnership with Partner Duisburg Essen University – Germany and HTC- Oman, Funded by TRC, 2022 & 2023
28. Solar Training Program, Partner SEI, USA, 2017 – 2023.
29. Programming Project, Partnership with Trimedia - Finland, Funded by Trimedia – Finland, 2018 – 2022.
30. Evaluation of Solar PV Panel in Oman, Partner Duisburg Essen University – Germany, Funded by TRC, 2022
31. Solar Panel Efficiency in Oman, Partner Duisburg Essen University – Germany, Funded by Gutech, 2021
32. Dar Al Attah Project, Funded by Wenware, 2020
33. Solar Projects R&D, Partner Duisburg Essen University – Germany, Funded by BP Oman 2019

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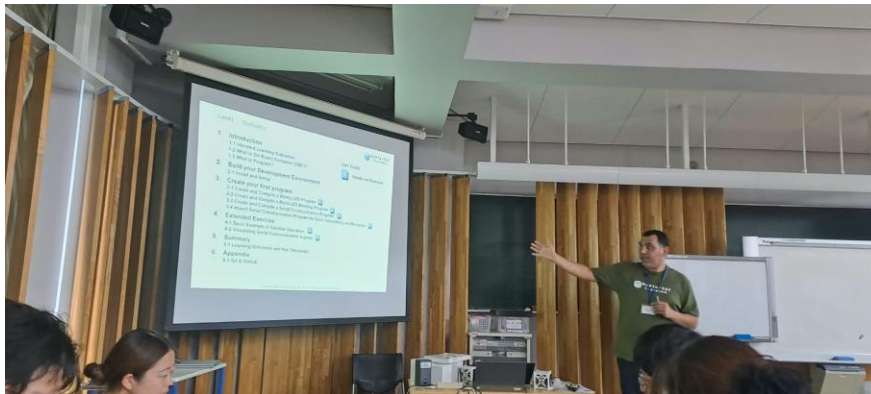
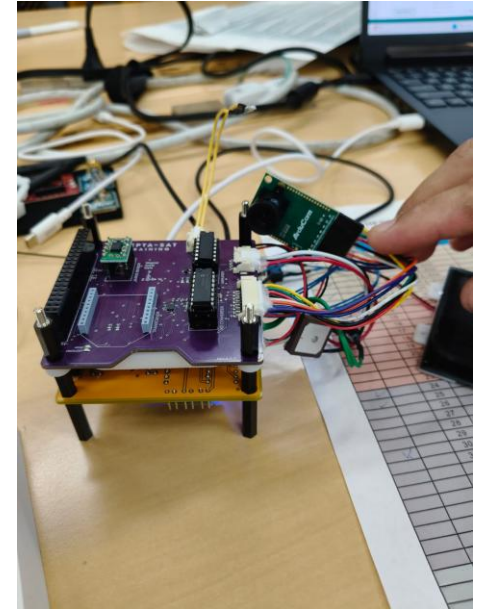
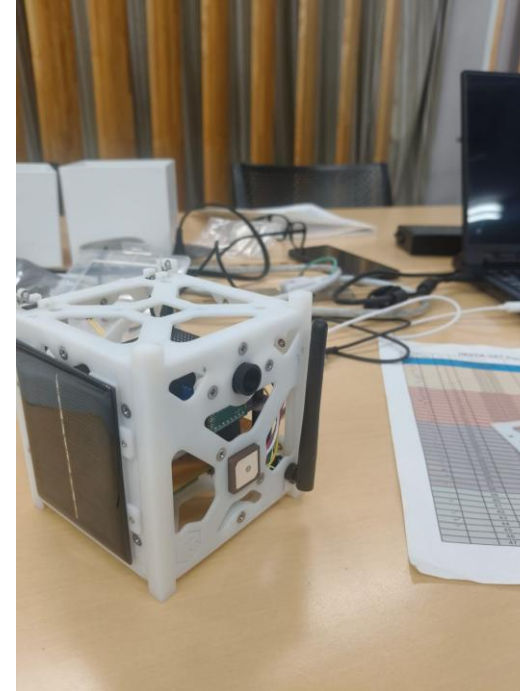
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LABORATORY DEVELOPMENT

1. Co-Founder (Design, and Implementer) of the Solar PV System, Hydrogen Lab, GUtech, 2026.
2. Founder (Design, Implementer and Running), Virtual Realty Laboratory, Computer Science Department, 2024.
3. Founder (Design, Implementer and Running), Computer Network Essential Laboratory, Computer Science Department, 2018.
4. Founder (Design, Implementer and Running), Computer Essential Laboratory, Computer Science Department, 2018.
5. Co-Founder (Design, Implementer, and Running), Solar Outdoor Laboratory, Engineering Department, 2018.
6. Co-Founder (Design, Implementer, and Running), Hardware Programming Laboratory, Engineering Department, 2017.
7. Co-Founder (Design, Implementer, and Running), Measurement Technique Laboratory, Engineering Department, 2017.
8. Co-Founder (Design, Implementer and Running), WSN Hardware Laboratory, Computer Science Department, 2016.

Memorable or Valuable Experience during CLTP15?

- Working with the Hardware.
- Building the first Satellite.
- Assigned as a Moderator & Leader
- My Team won the competition
- Teaching the Course



Learn or Gain from the Program?

- The training program was well organized. It provided not only valuable technical training but also an opportunity to experience Japanese culture.
- The program provided a valuable opportunity to learn about the Japanese approach to teaching professional courses and working with Teaching Assistants.
- The Teaching Assistants were very helpful, supportive, and actively engaged throughout the program. Their guidance and support contributed to a positive learning experience.



Apply CLTP15 experience to future work or activities?

- Academic Courses
- Professional Training Courses.
- R&D
- Final Year Projects
- Workshops & Seminars
- ...
- **POC**
- Forum
- **UNISEC-Global Local Chapters**
- Symposium/Conference

