MEMORANDUM OF AGREEMENT

THE ENVIRONMENTAL RESOURCES ONLINE WORKSHOP

BETWEEN

MING CHI UNIVERSITY OF TECHNOLOGY (MCUT)

AND

ANDALAS UNIVERSITY (UNAND)

This agreement is an addendum to the Memorandum of Understanding (MoU) that hereinafter referred to as Memorandum of Agreement (MoA) that contains the terms and conditions governing **the Environmental Resources Online Workshop** given to undergraduate programs; Faculty of Engineering, Universitas Andalas.

The MoA is signed:

BETWEEN:

MING CHI UNIVERSITY OF TECHNOLOGY, hereafter referred to as "MCUT" having its address at No. 84, Gongzhuan Road, Taishan District, New Taipei City, Taiwan and represented in this document by its Dean of College of Environment and Resources, Prof. Dr. Jang-Hsing Hsieh.

And

ANDALAS UNIVERSITY, hereafter referred to as "UNAND", having its address at Limau Manis, Pauh, Padang City, West Sumatra, the Republic of Indonesia (25175) and represented in this document by its Dean of Faculty of Engineering, Prof. Ikhwana Elfitri, Ph.D

Hereinafter is referred to singularly as "the Party" and collectively as "the Parties".

HAVE REACHED AN UNDERSTANDING as follows:

ARTICLE 1. SCOPE OF AGREEMENT

1.1. Objective

The purpose of this MoA is to establish the Environmental Resources Online Workshop to provide UNAND students with the knowledge into engineering-related fields of chemistry, biochemistry, environment and materials science. It is intended to become an international collaboration platform for the Parties. The strengths and expertise of the Parties provide the best international, cross-disciplinary education experience.

1.2. Program Name

The Program is called "Environmental Resources Online Workshop", hereinafter referred to as "the Program."

1.3. Graduation and Degree

After completing the Program, the participants will obtain 3 credits that will be transferred to their academic transcript. Besides, MCUT will also issue a certificate for the participants. Students' evaluation during the Program will be assessed by both the UNAND and MCUT professors instructing the Program.

1.4. Approval

It is understood that authority to enter into this MoA must be granted by the approval authorities of both institutions.

ARTICLE 2. PROGRAM DESCRIPTION

2.1. Period of Program

The Program starts from May 20th to July 19th 2021. The duration of the Program is 9 (nine) weeks with the total of 18 (eighteen) sessions. There will be 2 (two) sessions per week, on Mondays and Thursdays.

2.2. Learning Methods

The Program will be conducted synchronously via online platform (Zoom Meeting) and collaboratively between the UNAND and MCUT professors. Students are divided into 5-6 (teams) consisting of around 5 (five) students to conduct course assignments and a final project.

2.3. Students' Evaluation

Students' evaluation will be conducted by both the UNAND and MCUT professors with the assessment weights that are agreed between the Parties. The evaluation will be assessed by using criteria below:

No	Criteria	Weights	Grade
1	Attendance and Class Participation	20%	A: 80-100 B: 70-79

			TOTAL	100%	
2	Assignments			50%	C: 60-69
3	Final Group Presentation			30%	D: 50-59
			TOTAL	100%	

ARTICLE 3.   ADMINISTRATION AND TIMEFRAME

3.1 Admission Procedure

All the participants of the Program will be selected according to their academic, personal, and linguistic qualifications. To enter the Program, students first have to be admitted in the Undergraduate Program at UNAND.

3.2 Qualifications

a. The applicants should be in good academic standing with a cumulative grade point average of 3.00/4.00 or above.

b. For language proficiency, the applicants are required to have English Proficiency with minimum TOEFL score 450 or IELTS 5.5.

c. Applicants get recommendation from the Head of Study Program and are prospective students who planning to take the Fast Track (3+2) Program at MCUT.

3.3 Number of Students

After the process of recruitment and selection, UNAND will nominate 25-30 students to participate in the Program.

3.4 Obligations of the Parties

UNAND are obliged to:

a. Recommend qualified students for the Program.

b. Submit students' Curriculum Vitae.

c. Set up the Zoom meeting for each session.

d. Issue a Letter of Acceptance to indicate that the students are registered to the Program.

e. Nominate at least 1 (one) lecturer as the course instructor during the Program.

f. Assist and supervise the students with doing assignments during the Program period.

g. Collaborate with the MCUT professors to conduct an evaluation and issue grades for the students at the end of the Program.

h. Coordinate with internal related department to transfer the Program into academic transcript.

MCUT are obliged to:

a. Arrange the syllabus and timeline of the Program (as the Appendix below).

b. Nominate 7 (seven) professors to facilitate the learning process.

c. Provide the learning materials during the Program.

d. Collaborate with the UNAND professors to conduct an evaluation and issue grades for the students at the end of the Program.

e. Issue a participation certificate to each participant upon the completion of the Program.

ARTICLE 4. FINANCE AND SERVICE

4.1. Tuition fees

Students who participate in the Program will be billed in accordance with the standards of tuition fees in UNAND based on the number of credits that will be transferred into the academic transcript. MCUT will not charge any fees from the participating UNAND students.

4.2. Program funding

MCUT as the program host will cover all the expenses for the Program. The participating UNAND professor(s) will be offered with a funding of NTD12,000 in total for the 6 (six) sessions of student supervision and the final project session, after the completion of the Program.

4.3. Other expenses

The participating students will bear other expenses that may be necessary during the Program.

ARTICLE 5. FACULTY AND STUDENTS LIST

5.1. Each party nominates professors as instructors to facilitate the learning process and guide the students during the Program. Below is the list of instructors:

MCUT Instructors

No.	Name	Department
1	Dr. Jang-Hsing Hsieh	College of Environment and Resourses
2	Dr. Chao-Lin Liu	Chemical Engineering
3	Dr. Chih-Ping Chen	Materials Engineering
4	Dr. Kuo-Tong Lee	Chemical Engineering
5	Dr. Cheng-Ying Chen	Materials Engineering
6	Dr. Ching-Lung Chen	Safety, Health and Environmental Engineering
7	Dr. Chin-Yu Hsu	Safety, Health and Environmental Engineering

UNAND Instructors

No.	Name	Department
1	Dr. Fadjar Goembira	Environmental Engineering

MCUT : _____, UNAND: _____

2	Dr.Eng Shinta Indah	Environmental Engineering
3	Dr. Puti Sri Komala	Environmental Engineering
4	Budhi Primasari, M.Sc.	Environmental Engineering

5.2. UNAND nominates 25-30 students to participate in the Program. Below is the list of students.

No.	Name	Study Program
1	Mauriah Qibti	Environmental Engineering
2	Delma Octari	Environmental Engineering
3	Choirinisa Justika Asih	Environmental Engineering
4	Nadiah Atsil	Environmental Engineering
5	Salwa Salsabila Diar	Environmental Engineering
6	Azizah	Environmental Engineering
7	Finda Fahira	Environmental Engineering
8	Egina Safitri.A	Environmental Engineering
9	Shavira Aileen Ramadiani	Environmental Engineering
10	Yaura Jihan Shabirah	Environmental Engineering
11	Nurul Fitria Yolanda	Environmental Engineering
12	Nurul Hanifah	Environmental Engineering
13	Andini Fientri	Environmental Engineering
14	Rizky Firdaus Surya	Environmental Engineering
15	Nadia Tri Permata Dewi	Environmental Engineering
16	Fadel Fahreza	Environmental Engineering
17	Hasna Irbah	Environmental Engineering
18	Muhammad Fatur Rahman	Environmental Engineering
19	Rahmadhany Utami	Environmental Engineering
20	Muhammad Muzakkii Faaiz Saifullah	Environmental Engineering
21	Muhammad Luthfi Agustaf	Environmental Engineering
22	Salwa Salsabila Diar	Environmental Engineering

No.	Name	Study Program
23	Nadiah Atsil	Environmental Engineering
24	Farrel Denta	Environmental Engineering
25	Devina Rahmadyanthi Suhendri	Environmental Engineering
26	Ashifa Adetya	Environmental Engineering
27	Hafiz Syahputra	Environmental Engineering
28	Fatih Mubarak Simbolon	Environmental Engineering

ARTICLE 6. DURATION OF AGREEMENT

6.1. This agreement shall take effect from May 20th to July 19th, 2021 (9 weeks).

6.2. This agreement is a contract to facilitate and develop a mutually beneficial educational relationship. Any difference of opinion on the content of this agreement should be resolved by discussion by both Parties.

6.3. This agreement constitutes the entire agreement between the Parties. All prior discussion, agreement, whether verbal or in writing, are contained in this agreement. This agreement may be amended by the written consent of the Parties as an addendum.

ARTICLE 7. APPROVAL

Any notice or communication between the parties shall be delivered to the address, or sent to the facsimile number or emailed to the following:

For MCUT

Address	:	Center of International Affairs Ming Chi University of Technology No. 84, Gongzhuan Road, Taishan District, New Taipei City, Taiwan
Telephone No.	:	+886 -2-29089899 ext. 3006
Facsimile No.	:	+886-2-29084533
Contact Person	:	Chieh-Lan (Winnie) Li, PhD
Email address	:	winnieli@mail.mcut.edu.tw

For UNAND

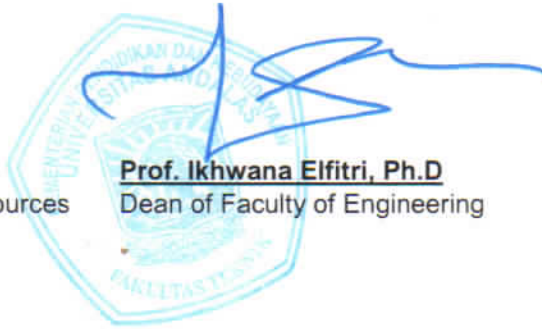|		
Address	:	International Office Andalas University J Limau Manis, Pauh, Padang City, West Sumatra, the Republic of Indonesia (25175)
Telephone No.	:	+62 751 777290
Facsimile No.	:	+62 751 71085
Contact Person	:	Vonny Indah Mutiara, PhD
Email address	:	mutiaravonny@agr.unand.ac.id

IN WITNESS WHEREOF, the authorized representatives of MCUT and UNAND hereto affix their signature on the date specified below.

SIGNED BY
for and on behalf
Taipei, March 1st, 2021
MING CHI UNIVERSITY OF TECHNOLOGY

Prof. Dr. Jang-Shing Hsieh
Dean of College of Environment and Resources

SIGNED BY
for and on behalf
Padang, March 1st, 2021
ANDALAS UNIVERSITY

Prof. Ikhwana Elfitri, Ph.D
Dean of Faculty of Engineering

Appendix

SYLLABUS OF

THE ENVIRONMENTAL RESOURCES ONLINE WORKSHOP
COLLABORATION BETWEEN

MING CHI UNIVERSITY OF TECHNOLOGY, TAIWAN

AND

ANDALAS UNIVERSITY, INDONESIA
May 20th to July 19th, 2021

No.	Date	Topic	Content	Lecturers
1	May 20th	Types of Water Pollutions Control & the Concept of Circular Economy	1. Introduction of water quality 2. Impact of wastewater discharges to environment 3. Eutrophication 4. Introduction of circular economy	Dr. Ching-Lung Chen
2	May 24th	Circular Economy in Wastewater Treatment	1. Overview of industrial wastewater treatment, recycling, and reuse 2. Treatment technology for material recovery from wastewater 3. Zero liquid discharge (ZLD)	Dr. Ching-Lung Chen
3	May 27th	Assignment and Tutorial		Dr. Puti Sri Komala
4	May 31st	Nontoxic/Earth-abundant Materials based Solar Cells for Low Cost Renewable Energy	1. How light is absorbed in a semiconductor 2. How a PN junction works (w/o the light) 3. What happens when we put the two together 4. Why thin-film solar cells? 5. Why CZTSSe [Cu2ZnSn(S1−xSex)4]? 6. What's the main challenge of CZTSSe? 7. What's the core technologies in this field?	Dr. Cheng-Ying Chen
5	June 3rd			
6	June 7th	Assignment and Tutorial		Dr. Fadjar Goembira
7	June 10th	Renewable Energy : Solar Energy	1. Introduction of Renewable Energy 2. Solar Cells 3. Organic Semiconductor 4. Organic photovoltaic	Dr. Chih-Ping Chen
8	June 15th	Plasma technologies applied in ecological and environmental sustainability	1. Basics of plasma 2. Basics of cold plasma technologies 3. Applications of cold plasma in food and health 4. Applications of cold plasma in environment engineering	Dr. Jang-Hsing Hsieh
9	June 17th	Assignment and Tutorial		Budhi Primasari, M.Sc

MCUT : _____ , UNAND: _____

No.	Date	Topic	Content	Lecturers
10	June 21st	Policy planning based on deep analysis of air pollution I	1. Introduce to air pollution and air quality index (AQI) 2. The relationship between air pollution inventory and air pollution prevention	Dr. Chin-Yu Hsu
11	June 24th	Policy planning based on deep analysis of air pollution II	3. Application of air pollution dispersion model for source-contribution 4. Air pollution and risk assessment	Dr. Chin-Yu Hsu
12	June 28th	Assignment and Tutorial		Dr. Fadjar Goembira
13	July 1st	Pollutant assessment by XRD and XRF: (1) Case study of paper and (2) Introduction to XRD and XRF I	1. Lead pollution of shooting range soils by XRD 2. Portable XRF applications in soil science 3. Principles of X-ray diffraction (XRD) analysis 4. Principles of X-ray fluorescence (XRF) analysis	Dr. Kuo-Tong Lee (KT Lee)
14	July 5th	Pollutant assessment by SEM and EDS: (1) Case study of paper and (2) Introduction to SEM and EDS II	1. Chromatite $Ca(CrO_4)$ in soil polluted with electroplating effluents, analyzed by SEM/EDS 2. Application of SEM/EDS for pollution particle source determined in residential dust and soil 3. Principles of scanning electron microscopy (SEM) analysis 4. Principles of energy dispersive X-ray spectroscopy (EDS) analysis	Dr. Kuo-Tong Lee (KT Lee)
15	July 8th	Assignment and Tutorial		Dr. Fadjar Goembira
16	July 12nd	Bioremediation	1. Definition 2. Categories 3. Mechanism for pollutants removal	Dr. Chao-Lin Liu
17	July 15th	Molecules techniques in biomediation	1. Identification 2. PCR 3. Gene engineering	Dr. Chao-Lin Liu
18	July 19th	Group Presentation and Course Feedback		UNAND and MCUT Professors

MCUT : _____, UNAND: _____