

**DUAL DEGREE PROGRAM REQUIREMENTS**  
**MS ENVIRONMENTAL ENGINEERING (MEN) & MS INDUSTRIAL SAFETY AND**  
**DISASTER PREVENTION (MS ISDP)**  
**MIT-PHILIPPINES AND CNU-TAIWAN**

**A] For Mapua MEN Students to get MS ISDP at CNU**

A minimum of 32 credit units is required. Of these, 22 units are required academic courses (i.e., inclusive of 6 units Thesis and 2 units Seminar Course), 10 credit units of Elective Courses. A total of 20 and 12 credit units to be enrolled in MIT and CNU, respectively. At least 3 credit units of Elective Course shall be enrolled in MIT. A final oral examination is mandatory.

**A] Required Academic Courses**

<b>Course Code</b>	<b>Course Title</b>	<b>Credit</b>	<b>Course Status</b>	<b>Care Taker</b>
ENV220	Physical Principles of Environmental Engineering	3	Rqd	MIT
ENV221	Chemical Principles of Environmental Engineering	3	Rqd	MIT
ENV222	Biological Principles of Environmental Engineering	3	Rqd	MIT
ENV223P	Analytical and Numerical Principles of Environmental Processes	3	Rqd	MIT
ENV225L	Environmental Engineering Laboratory	2	Rqd	MIT
RES290	Research Techniques with Statistical Methods	3	Rqd	MIT
	Seminar	2	Rqd	CNU
	Thesis 1	3	Rqd	CNU
	Thesis 2	3	Rqd	CNU
	<b>Total Required Courses</b>	<b>22</b>		
<b>ELECTIVE COURSES</b>				
(Should enroll at least 3 and 7 credit units elective courses at MIT and CNU, respectively )				
	Special Topics on Industrial Risk Assessment	2	Opt	CNU
	Failure and Reliability Analysis	2	Opt	CNU
	Special Topics in Human Factors	2	Opt	CNU
	Special Topics on Fire and Explosion Prevention	2	Opt	CNU
	Special Topics on Fire Safety	2	Opt	CNU
	Special Topics on Mechanical and Electrical Facility Safety	2	Opt	CNU
	Special Topics on Chemical Process Safety Assessment	2	Opt	CNU
	Construction Safety Assessment	2	Opt	CNU
	Special Topics on Plant Safety	2	Opt	CNU
	Disaster Prevention and Rescue Policy and Law	2	Opt	CNU
ENV240	Physicochemical Process Design	3	Opt	MIT
ENV241	Biological Process Design	3	Opt	MIT
ENV250	Advanced Treatment and Remediation Processes	3	Opt	MIT

ENV253	Solid and Hazardous Waste Management	3	Opt	MIT
ENV260	Surface Water and Groundwater Flow	3	Opt	MIT
ENV261	Fate and Effects of Contaminants in Surface Water and Groundwater	3	Opt	MIT
ENV270	Air Pollution Physics and Chemistry	3	Opt	MIT
ENV272	Air Pollution Control	3	Opt	MIT
ENV284	Environmental Engineering Modeling	3	Opt	MIT
ENV290	Public Health Engineering	3	Opt	MIT
ENV291	Basic Environmental Toxicology	3	Opt	MIT
Total Elective Courses		10		

Rqd means required; Opt means optional

### **B) For CNU MS EES Students to get MEN in MIT**

A minimum of 32 credit units is required. Of these, 22 units are Required Academic Courses (among which is the ENV223P to be taken in MIT, 6 units Thesis, and 2 units Seminar Course to be taken in CNU), and 10 credit units Elective Courses. A total of 20 and 12 credit units to be enrolled at CNU and MIT, respectively. At least 3 credit units of Elective Course shall be enrolled in CNU and other elective courses shall be enrolled in MIT. A final oral examination is mandatory.

<b>Course Code</b>	<b>Course Title</b>	<b>Credit</b>	<b>Course Status</b>	<b>Care Taker</b>
ENV223P	Analytical and Numerical Principles of Environmental Processes	3	Rqd	MIT
	Seminar	2	Rqd	CNU
	Thesis 1	3	Rqd	CNU
	Thesis 2	3	Rqd	CNU
Total Required Courses		11		
<b>ELECTIVE COURSES</b> (Should enroll in 6 credit units of among the elective courses in MIT, other elective courses shall be enrolled in CNU)				
ENV220	Physical Principles of Environmental Engineering	3	Opt	MIT
ENV221	Chemical Principles of Environmental Engineering	3	Opt	MIT
ENV222	Biological Principles of Environmental Engineering	3	Opt	MIT
ENV225L	Environmental Engineering Laboratory	2	Opt	MIT
ENV253	Solid and Hazardous Wastes Management	3	Opt	MIT
ENV250	Advanced Treatment and Remediation Processes	3	Opt	MIT
ENV261	Fate and Effects of Contaminants in Surface Water and Groundwater	3	Opt	MIT
ENV272	Air Pollution Control	3	Opt	MIT
ENV290	Public Health Engineering	3	Opt	MIT
ENV291	Basic Environmental Toxicology	3	Opt	MIT
	Special Topics on Industrial Risk Assessment	2	Opt	CNU

	Failure and Reliability Analysis	2	Opt	CNU
	Special Topics in Human Factors	2	Opt	CNU
	Special Topics on Fire and Explosion Prevention	2	Opt	CNU
	Special Topics on Fire Safety	2	Opt	CNU
	Special Topics on Mechanical and Electrical Facility Safety	2	Opt	CNU
	Special Topics on Chemical Process Safety Assessment	2	Opt	CNU
	Construction Safety Assessment	2	Opt	CNU
	Special Topics on Plant Safety	2	Opt	CNU
	Disaster Prevention and Rescue Policy and Law	2	Opt	CNU
	Total Elective Courses	10		

**NOTE:**

Recommended stay of students in CNU and Mapua is one year. Final thesis manuscript shall be written in English. Professors who supervise the research of the students are encouraged to be present during the defense. Students pay all required fees at their home institution. Students are encouraged to publish at least one scientific paper. CNU students are required to attend Seminar/Research Colloquium at Mapua.