

# ANNEX I: Curricula of Phase in Japan

Details of Subjects are explained in ANNEX IV

Outputs	Subjects			Methodology	
	Category	Seismology group	Earthquake Engineering group		Tsunami Disaster Mitigation group
		(S group)	(E group)		(T group)
(1) To acquire basic concepts and theories (general)	Orientation	Orientation			Lecture
	Basic Subjects Related with Earthquake and Disasters	Information Technology Related with Earthquakes and Disasters	Structural Analysis	Information Technology related with Earthquakes and Disasters	Lecture, Practice and Seminar
		Earthquake Phenomenology	Ground Vibration and Structural Dynamics	Earthquake Phenomenology	
	Advanced Subjects Related with Earthquake and Disasters	Earthquake Circumstance	Seismic Structures	Earthquake Circumstance	Lecture, Practice and Seminar
		Characteristics of Earthquake Disasters	Seismic Evaluation and Seismic Design Code	Theory of Tsunami	
Special Topics (S)		Special Topics (E)	Special Topics (T)		
(2) To acquire basic concepts and theories (detail)	Earthquake/ Tsunami Hazard and Risk Assessment	Earthquake Hazard Assessment A		Tsunami Hazard Assessment	Lecture, Practice and Seminar
		Earthquake Hazard Assessment B	Earthquake Risk Assessment	Tsunami Countermeasures	
(3) To understand new countermeasures	Case Studies	Practice for Earthquake Disaster - Recovery Management Policy I, II Practice for Earthquake Disaster - Recovery Management Policy III		Practice for Tsunami Disaster Mitigation Policy	Lecture, Practice, Study tour, Seminar and Presentation
(4) To complete a research report	Master Thesis Seminar	Menu for the topics of Master Thesis Seminar			Practice, Seminar and Presentation
		- Determination of Earthquake Source Parameters	- Nonlinear Earthquake Response Analysis and Damage Prediction	- Tsunami Simulations: Propagation and Inundation	
		- Earthquake Source Process	- Seismic Isolation and Response Control Techniques	- Tsunami Source Modeling due to Earthquake	
		- Seismotectonics (e.g., Stress field estimation, seismicity analysis)	- Seismic Performance-Based Design	- Tsunami Hazard Assessment from Tsunami Simulations	
		- Earthquake Generation and Forecasting	- Seismic Evaluation and Retrofitting Techniques of Existing structures	- Tsunami Risk Assessment	
		- Crust and Upper Mantle Structure Determination using Seismic Tomography, Receiver Function, Ambient Noise, etc.	- Post-Earthquake Damage Inspection and Damage Classification	- Tsunami Database for Tsunami Early Warning System (TEWS)	
		- Site Effect Studies using Strong Ground Motion Records	- System Identification and Health Monitoring	- Rapid Determination of Earthquake Parameters for TEWS	
		- Geophysical Prospecting using Microtremors and Surface Waves	- Effects of Surface Geology on Seismic Motion and Soil-Structure Interaction	- Real Time Usage of Observed Tsunami Data for TEWS	
		- Strong Ground Motion Simulation	- Geotechnical Engineering and Foundation Structures	- Tsunami Earthquakes	
		- Earthquake Early Warning	- Others (e.g., Strategies for Earthquake Disaster Mitigation)	- Non-tectonic Tsunami (Volcanic Eruption, Landslide)	
	- Others (e.g., Crustal Deformation, Volcano Seismology, Application of Machine Learning)	- Others (e.g., Tsunami Evacuation Planning, Application of Machine Learning)			
(5) (for Master Program)	Disaster Management Policy	Disaster Management Policies A: from Regional and Infrastructure Aspect			Lecture, Site visit, Presentation and Discussion
		Disaster Management Policies B: from Urban and Community Aspect			

\* It is mandatory for the applicants to select one of the topics listed in this table and to write it explicitly in the face page of Inception Report. For those who select 'Others', it is mandatory to describe a concrete plan of Individual Study including the expected supervisor's name and affiliation.