# *ANNEX I: Curricula of Phase in Japan*

*Details of Subjects are explained in ANNEX IV*

| Outputs | Subjects | | | | Methodology |
|---|---|---|---|---|---|
| | Category | Seismology group **(S group)** | Earthquake Engineering group **(E group)** | Tsunami Disaster Mitigation 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 | | | Lecture, Practice, Seminar and Presentation |
| | | Practice for Earthquake Disaster - Recovery Management Policy III | | Practice for Tsunami Disaster Mitigation Policy | |
| (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)*** | |
| (5)(for Master Program) | Disaster Management Policy | Disaster Management Policies A: from Regional and Infrastructure Aspect | | | Practice, Seminar and Presentation |
| | | 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.*