

Activities of Remote Sensing and GIS Research Center in Yangon Technological University

Symposium

On

Building Capacities for Evolving Geospatial Needs in Myanmar

Date: 24th to 25th, May 2018



- ❑ To train undergraduate and postgraduate students in the fields RS and GIS technology and GNSS signal processing and to enhance the skill and competency of the students in their corresponding discipline.
- ❑ To enable effective and extensive use of RS and GIS technology in the postgraduate research work of the university.
- ❑ To collaborate with other engineering departments and international organizations in order to promote effective use of RS and GIS technology in their corresponding research areas.
- ❑ To cooperate and carry out the research work in the areas of natural disaster reduction, natural resources management, water resources and transportation management, urban planning and the impact of climate changes contributed to sustainable environment and development of a country.



Objectives



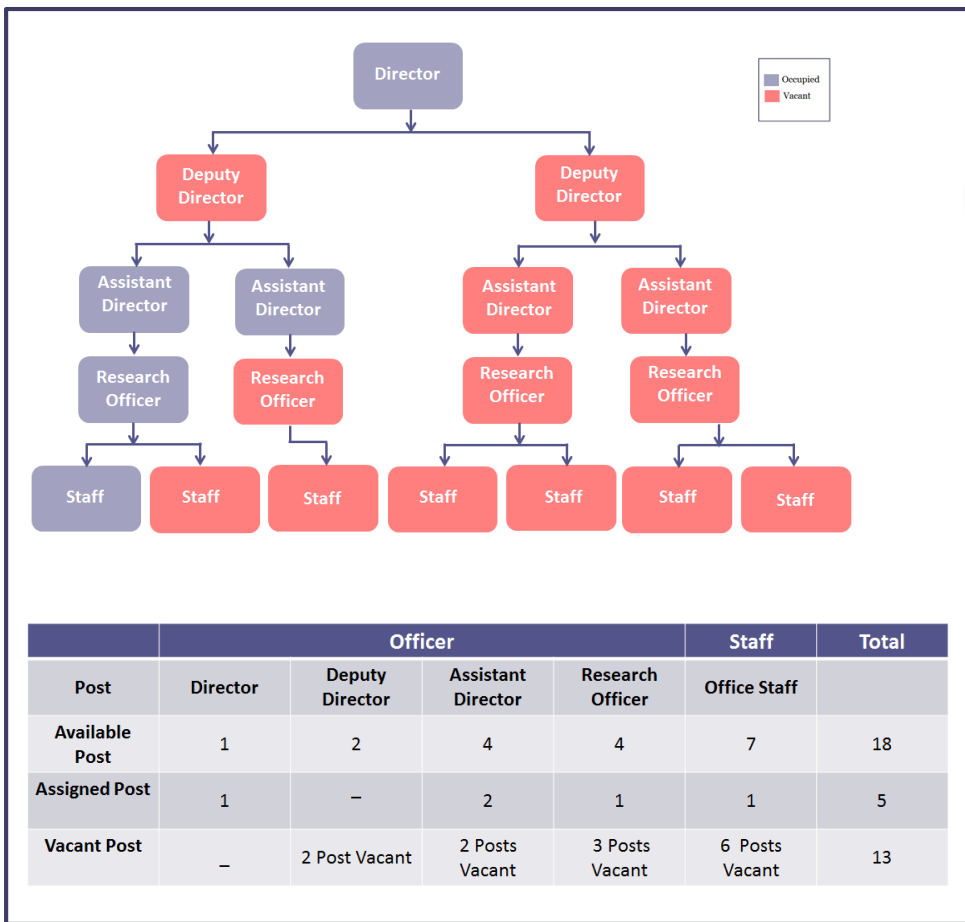
Vision

- To be able to stand as an academic excellence research center in the field of Remote Sensing & GIS contributed to socio-economic development of the country and development of comprehensive disaster resilience platform.

Mission

- To contribute academic support to under graduate and post graduate students of YTU in the discipline of Remote Sensing & GIS.
- To develop Research & Development (R&D) project by means of conducting trainings, workshops and seminars in collaboration with national and international organization.
- To develop Comprehensive Disaster Resilience and Collaboration Platform.

Organizational Structure, Staff and Lab Facility



Regular Course Offered

No.	Courses	Subject
1	Ph.D (Water Resource Engineering)	Remote Sensing
2	M.E (Water Resource Engineering) M. E (Transportation Engineering) Post Graduate Course (Water Resource Engineering) Post Graduate Course (Transportation Engineering)	Remote Sensing and Geographic Information System
3	Master of Science (Environmental Engineering) Master of Science (Environmental Planning and Management)	Remote Sensing
4	Master of Science (Water Resource Engineering)	Remote Sensing
5	Under-Graduate Course	Photogrammetry, Remote Sensing and Adjustments

Capacity Building Training in Collaboration With Local and International Organization (2015 – Till Now)

No.	Training
1	Post Disaster (Earthquake) Rapid Damage Assessment
2	Google Earth Engine for Satellite Data Processing
3	Landuse/Landcover Mapping of Yangon City by Remote Sensing
4	Google Earth Engine for Water Related Mapping
5	Principle and Application of 3D Laser Scanner Measurements for Civil Infrastructures
6	GNSS Signal Processing for RTK Solution
7	3D Terrain and Building Mapping of Yangon City by Remote Sensing
8	Visualizing the Height of the Buildings in 3D Model by Using QGIS
9	3D Terrain and Building Mapping of Yangon by Remote Sensing

Current Research



SATREPS Project



Development of a Comprehensive Disaster Resilience and Collaboration Platform in Myanmar
(Research Collaboration between Myanmar and Japan led by Yangon Technological University and the University of Tokyo)

Signing Ceremony of Collaborative Research Arrangement (CRA)



No.	Research Topic	Partnership	Remark
1	Geospatial Database Development for Land Use Land Cover (LULC) and Urban 3D Measurement	The University of Tokyo	This research is carried out under the project entitling “Development of Comprehensive Disaster Resilience and Collaboration Platform in Myanmar” as a RS & GIS Research Group

Research Groups

Transportation and Human Mobility Group

MPT base station locations and voronoi cells

Land cover generated from Landsat 8

Land cover weighted 250 m grid cells

GPS-mounted public bus

Visualize traffic/crowd flow by cell-phone

Water-Related Disaster Group

Metecological observation equipment

Simulated Flood Inundation for the 100 year Return Period and for 2011 Flood Event of Bago River Basin

Residents survey at the flood affected area along Bago river

RS & GIS Group

Landsat reveals urban expansion patterns of Yangon from 38km² (1973) to 204 km² (2009)

Geoeye 50cm digital terrain and building database of Yangon

Digital building height map

Digital terrain map

Training at YTU on RS and GIS

Earthquake-Related Disaster Group

Developing Building's vulnerability of Yangon City through interviews and field surveys

Tentative Vulnerability Assessment

Structural analysis & 3D scan of heritage building

"Re-Discover Yangon" Workshop, making 1/500 scale model of the central part of CBD

Disaster Management Group

Workshop with various stakeholders from government, NGO and International Organizations

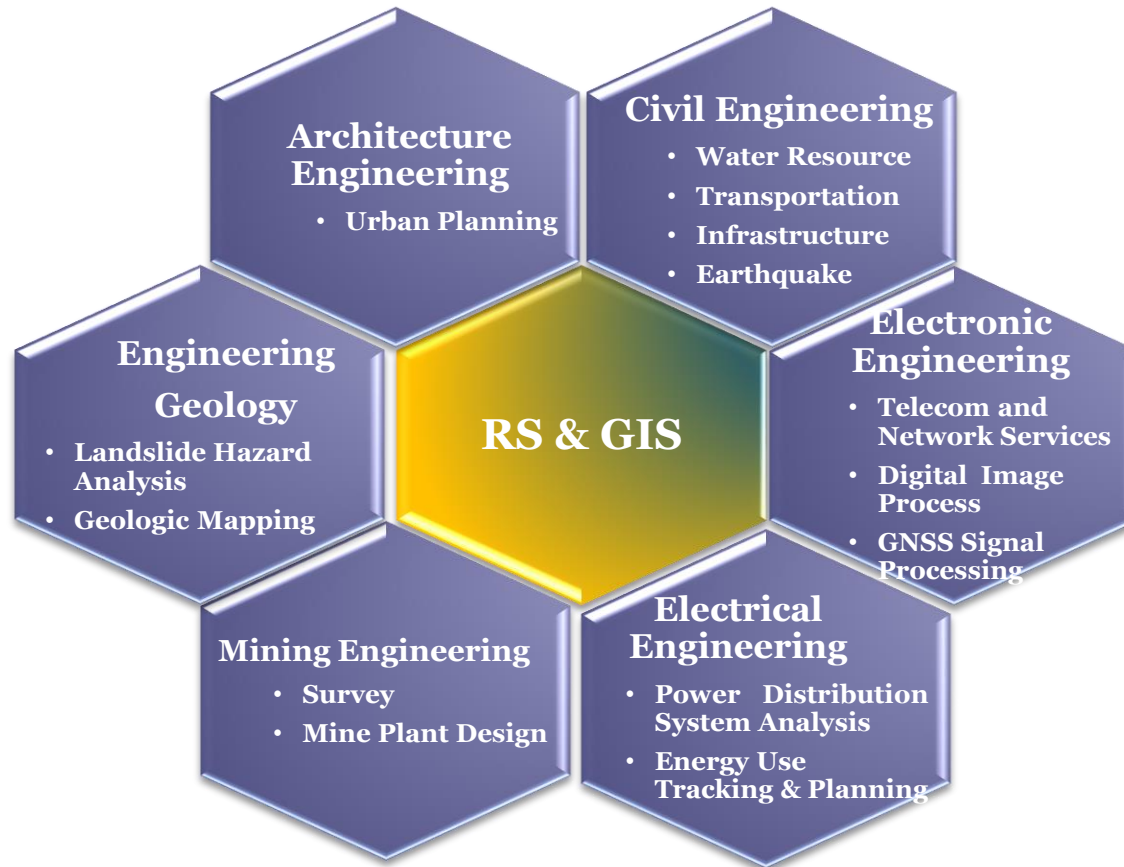
affected area of Taik Kyi

Infrastructure Group

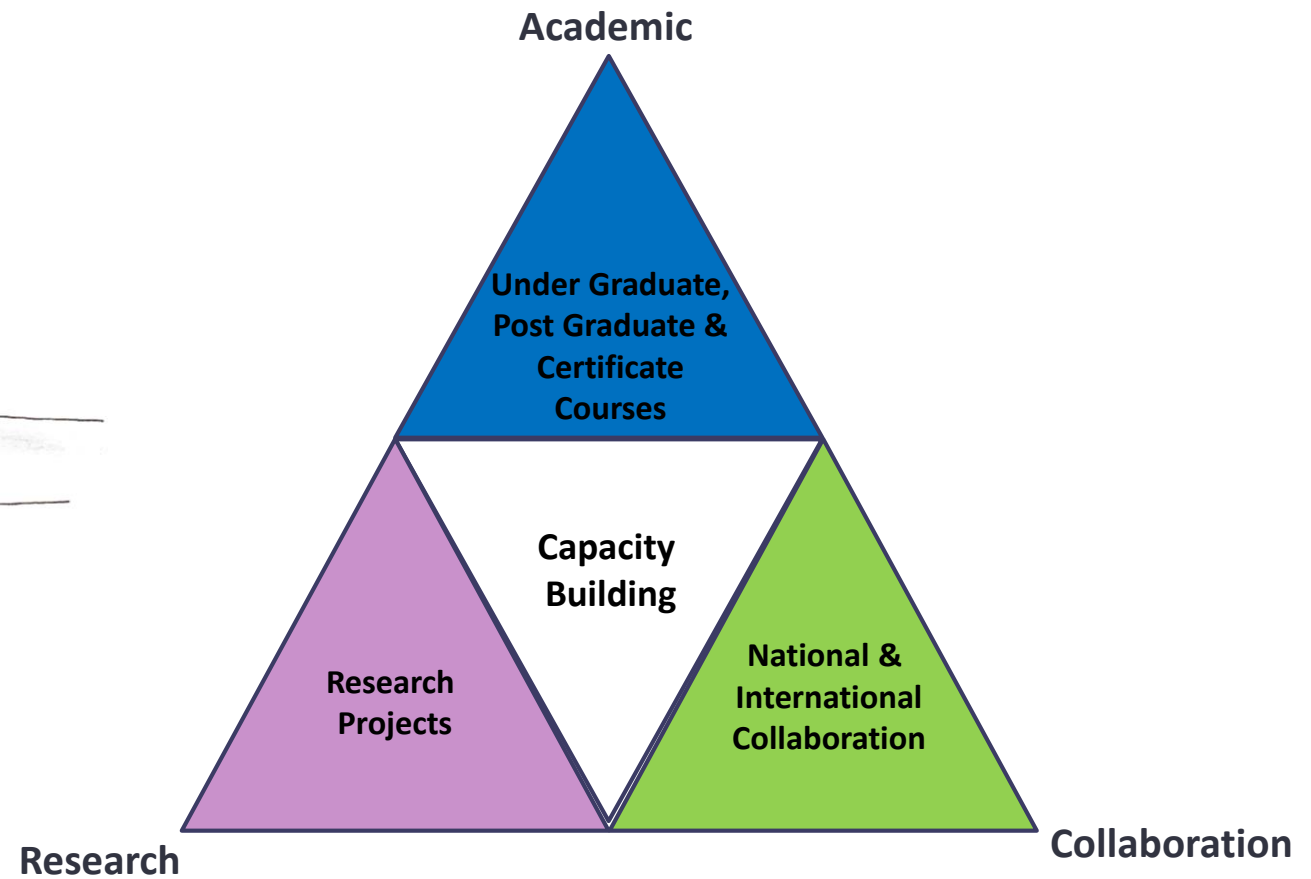
Convert bridge inventory list of MOC (4000bridges) to GIS database

Propose management system including damage Inspection, retrofit & repair

Geospatial Needs For Engineers in YTU

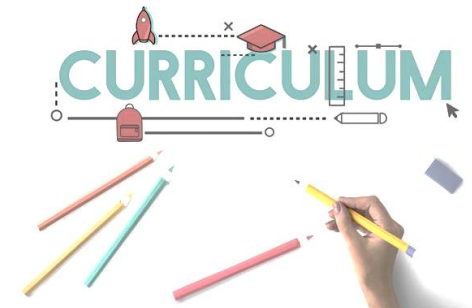


Approach for Capacity Building

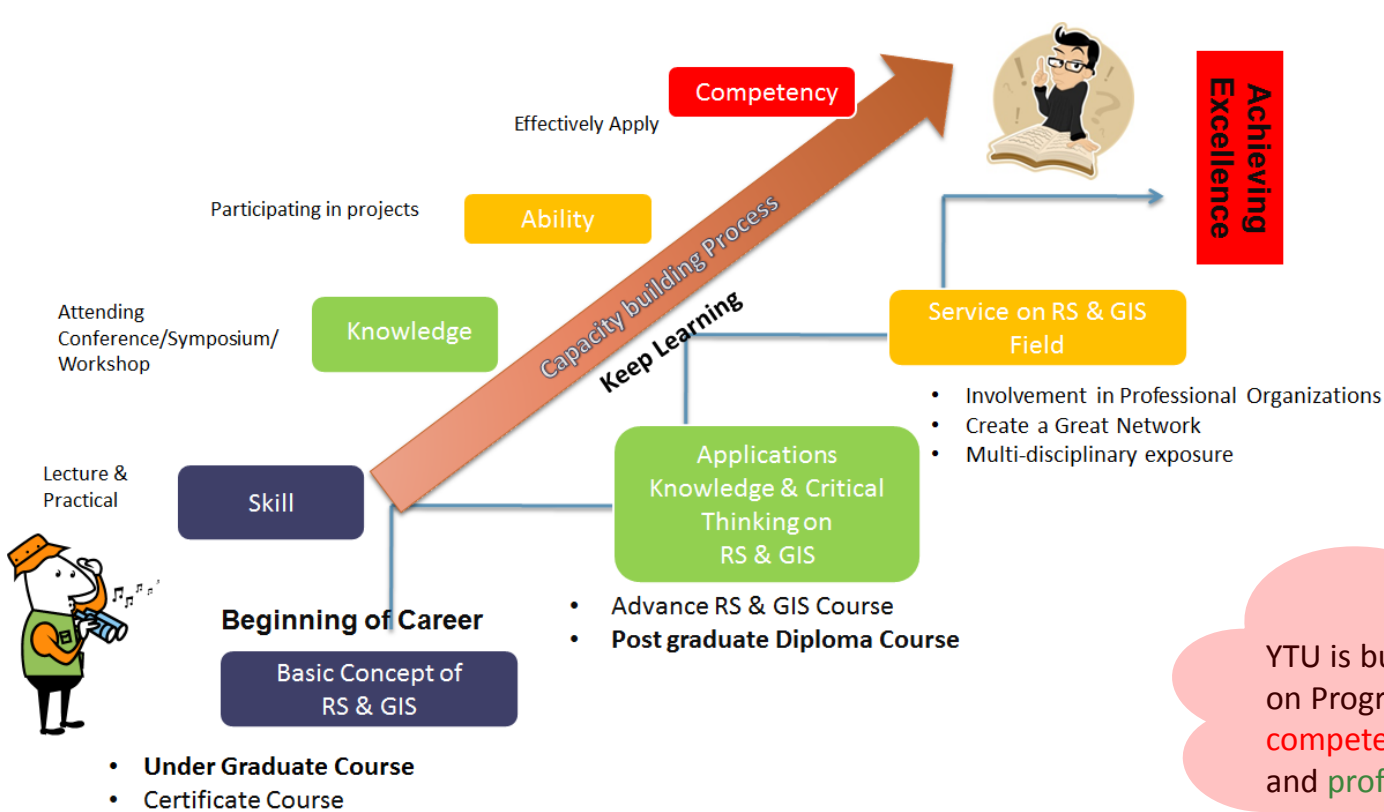


Mechanism to Review Curriculum

- Accredited Program in accordance with EEAC (Engineering Education Accreditation Committee) Guideline.
 - Internal (DACDC) Departmental Academic & Curriculum Development Committee (Professor, Associate Professor, Lecturer, Assistant Lecture, etc.) and External DACDC (Academic Stakeholders, Industrial Stakeholder, Alumni, etc.) reviewed curriculum based on (PEO) Program Objectives that include technical competence, communication Skills/Leadership, and Professional Ethics/Life-long Learning and Program Outcome (PO) which are inline with Mission and Vision of YTU.
- RS & GIS local community and target customers.
- Internal and international academic advisors.
- Outcome of each program every year.



The Skills and Competencies



YTU is building skill and competencies based on Program Objectives such as **technical competence**, **communication skills/leadership** and **professional Ethics/life-long learning**.

- Need adequate staffs and facilities
- Absence of uniform academic standard and lack of networking
- Lack of financial resources for international exposures
- Majority require retraining to update on knowledge in the emerging new technologies
- Need short duration refreshers course to remove wide gap in adaptation of contemporary technology
- Curriculum should address the newer scientific arena



Vision for the Next Five Years

Expected to materialize the following plans

No.	Training	Duration	Target Customer
1	Post-graduated Diploma Course	9 months	Any graduate
2	Certificate Course	4 months	Any graduate
3	Regular Professional Development Capacity Program	To be considered	Local institutions
4	Refresher Course for Engineering Technological University	To be considered	Technological Universities in Myanmar
5	Outreach Program	To be considered	External Students & Researchers




Proposed Capacity Training Program to be Opened

No.	Service Supporting Activities	Target Institution
1	Technical Consultant	Local Institution

Proposed Supporting Activities

How to Strengthen the Wider Geospatial Community in Myanmar?

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- Promote creating network
 - Active collaboration and cooperation internally and externally
 - Holding seminar, workshop, conference and training
 - Sharing knowledge and experience gained from national and international institutions for extensive and effective use of geospatial technology
 - Need to create a platform enabling geospatial data sharing and access

Thank You

