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MARE eScience modules for doctoral students



- eScience modules for doctoral students will be supported with the special module and **methodological guidelines**. It will contain different resources for structured doctoral programs (IN, MN);
- Guidelines for the **organization** of the **learning process** (IN, MN);
- Links to the **resources/ databases** in the field of support green & blue infrastructure and nature-based solutions (World, Europe, Asia, Partner countries);
- Search and referral system for **conferences** and other **events** and resources (GBI and NBS);
- **Portfolio system** for postgraduate students.
- A special site for MARE PhD students <https://projects.zmml.uni-bremen.de/portal/site/esciencemare>;
- This site contain special information for the doctoral students, the **rules** and **regulations** (VN, MY), information on scientific **topics (GBI and NBS)**, links to the **scientific conferences, literature, Big Data, databases** (solutions (World, Europe, Asia, Partner countries), frameworks, **software**.

<https://projects.zmml.uni-bremen.de/portal/site/esciencemare>



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OVERVIEW

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e-Science provides the computing, data storage and networking infrastructure required by today's advanced science facilities to support the complete scientific lifecycle, from background research, through simulation and experimental design, data collection and analysis to publication (STFC – Science and Technology Facilities Council, UK).

It's significant that the UK is the first country to develop a national eScience grid, which intends to make access to computing power and scientific data repositories as

Recent Announcements Link

Options

Announcements

(viewing announcements from the last 10 days)

There are currently no announcements at this location.

Calendar Link

Options Publish (private)



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What is E- Science?

- The term was created by **John Taylor** , the Director General of the United Kingdom's Office of Science and Technology in **1999** and was used to describe a **large funding initiative** starting in November 2000.
- A broad understanding "**the application of computer technology** to the undertaking of modern scientific investigation, including the **preparation, experimentation, data collection, results dissemination, and long term storage and accessibility** of all materials generated through the scientific process".
- E- Science provides **the computing , data storage and networking infrastructure** required by today's advanced science facilities to support the **complete scientific lifecycle** , from background research, through **simulation and experimental design , data collection and analysis** to publication (STFC Science and Technology Facilities Council, UK)
- These may include **data modeling and analysis**, electronic/digitized **laboratory notebooks**, raw and fitted **data sets**, **manuscript** production and draft versions, pre-prints, and print and/or **electronic publications**;
- E- Science promotes **innovation in collaborative, computationally or data intensive research across all disciplines** throughout the research lifecycle".
- It is a **new type of scientific research** based on the **collaboration** within a number of scientific areas, enabled by a next generation infrastructure, wherein people, **computing resources, data and instruments** are brought together to bring a new quality to the everyday work of researchers.
- Access and use **computing power** , extremely **large sets** of data and experimental facilities.
- **Internet possibilities and other information technologies**
- They enable scientists to participate in **global collaborations** and have changed the way researchers



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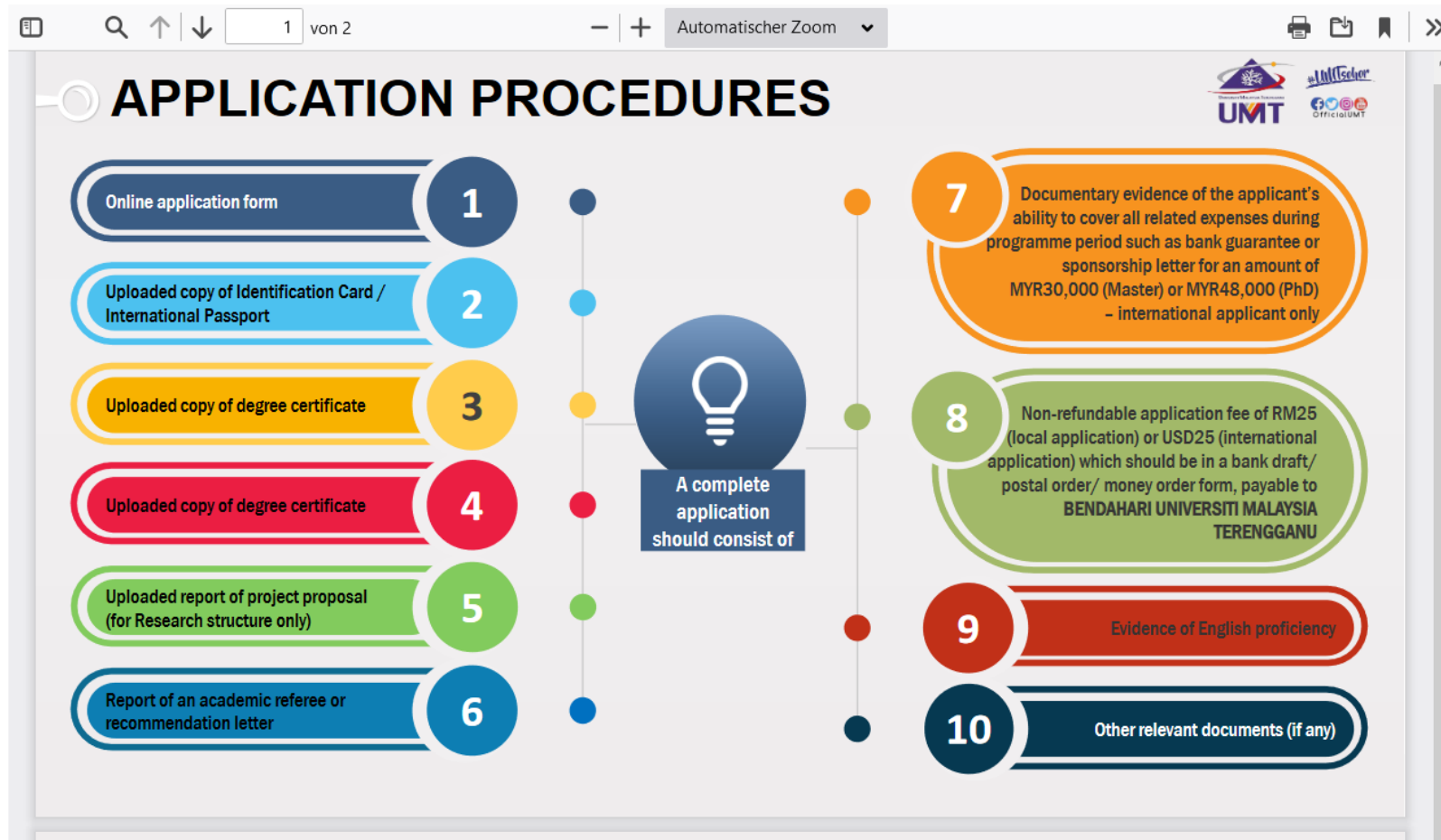
POST GRADUATE STUDY

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Rules and Regulations in VN

Rules and Regulations in MY

APPLICATION PROCEDURES UMT





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GUIDELINES

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Structure of portfolio for doctoral students

Information on doctoral student:

- First and last name
- Structural unit (department, institute)
- Curriculum title

General information on studies:

- Thesis title in English and in local language
- Supervisor(s)
- Curriculum, year of matriculation
- Academic leaves

INFORMATION ON ACADEMIC YEAR NO. 1...3(4)

Status of research work:

- Overview of performed tests, collected data, field works, content and preliminary results of data processing
- 10 most important articles, book chapters etc, with short summary

Meetings with supervisors:



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- Skill-related and technical info, e.g. publishing requirements and recommendations, links to indexing databases:
- Links to research databases, libraries, real life observations, research and study versions of models and analysis tools:
- e-library of Faculty of Marine resources Management-MAREM, HCMUNRE
- MFAST-Malaysia Marine Forecast System:
- News feed with conferences, seminars, summer schools, upcoming special issues etc.:



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Links > Skill-related and technical info, e.g. publishing requirements and recommendations, links to indexing databases:

Skill-related and technical info, e.g. publishing requirements and recommendations, links to indexing databases:

- The list of escience centers:
- Founded in 2012 as an independent foundation by NWO and SURF, the Netherlands eScience Center is the national centre for innovative software solutions in academic research. Source: <https://www.esciencecenter.nl/about/>
- OPeNDAP is a framework that simplifies all aspects of scientific data networking.
- OPeNDAP provides software which makes local data accessible to remote locations regardless of local storage format.
- OPeNDAP also provides tools for transforming existing applications into OPeNDAP clients (i.e., enabling them to remotely access OPeNDAP served data).
- OPeNDAP software is freely available.
- OPeNDAP is used for the access to the oceanographic information.
 - Matlab and Ferret support this protocol and use it for the data access.

Source: <https://www.opendap.org/>

The full list of the data resourses avilble for OPeNDAP is here: https://docs.opendap.org/index.php/Dataset_List#NCEP_AWIPS_%20GFS_Model_Data

- Ferret is an interactive computer visualization and analysis environment designed to meet the needs of oceanographers and meteorologists analyzing large and complex gridded data sets. It runs on recent Unix and Mac systems, using X windows for display. PyFerret, introduced in 2012, is a Python module wrapping Ferret. PyFerret is an upgrade to Ferret which runs existing Ferret scripts and includes all Ferret functionality with updated graphic capabilities and additional analysis

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Links > Links to research databases, libraries, real life observations, research and study versions of models and analysis tools:

Links to research databases, libraries, real life observations, research and study versions of models and analysis tools:

- The ocean plays a major role in the earth's climate. It stores, transports and exchanges large amounts of heat, water and gases, and acts as a memory of the climate system. Global ocean observations are critical to understand and forecast the earth's climate and weather as well as for a wide range of ocean services. A system for operational oceanography has been developed in France. Three approaches exist from some years to monitor and forecast the ocean behavior : Seasurface observation using satellite sensors, In situ measurements from ships, moored or drifting autonomous systems, Assimilation of in-situ and satellite data in an ocean circulation model. Source: <http://www.coriolis.eu.org/AboutCoriolis/Overview>
- BCO-DMO, located at the [Woods Hole Oceanographic Institution](#), is a combination of the formerly independent Data Management Offices formed in support of the US JGOFS and US GLOBEC programs. The BCO-DMO staff members are the curators of the data collections created by those respective programs, as well as data from more recent NSF Geosciences Directorate (GEO) Division of Ocean Sciences (OCE) Biological and Chemical Oceanography Sections, Division of Polar Programs (PLR) Antarctic Sciences (ANT) Organisms & Ecosystems, and Arctic Sciences (ARC) awards. The BCO-DMO project is funded by NSF OCE and ANT programs, NSF award number OCE-1924618. A more complete description of BCO-DMO is available as a [downloadable PDF file](#) (1.2 MB) as well as [online documentation describing the BCO-DMO data management model](#). Source: <https://www.bco-dmo.org/data>
- The centre is one of three centres serving the mission of the USGS Coastal and Marine Hazards and Resources Program—the primary Federal marine geology and physical science research program responsible for the Nation's entire coastal and marine landscape. The centre conducts scientific research in various locations throughout the United States to describe and understand the processes shaping coastal and marine ecosystems. The centre's research is used to make informed decisions about the use, management, and protection of our coastal resources. Source: <https://www.usgs.gov/centers/whcmisc>
- A database of coastal sea level anomalies and associated trends from Jason satellite altimetry from 2002 to 2018. The new coastal sea level data set is based on complete reprocessing of raw radar altimetry waveforms from the Jason1 Jason-2 and Jason-3 missions to derive satellite-sea surface ranges as close as possible to the

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[Links](#) > **MFAST-Malaysia Marine Forecast System:**

MFAST-Malaysia Marine Forecast System:

Ocean forecasts are scientific predictions about the future state of the ocean, providing vital information of ocean current, temperature, surface wave and wind for a given region. The ocean forecasting system (OFS) is important as an early warning system that will allow a better preparation for the severe events in the ocean.

The MFAST is developed under the collaboration between Universiti Malaysia Terengganu (UMT) and First Institute of Oceanography (FIO), China, which is a supplementary product of the Ocean Forecasting Demonstration System (OFDS) for Southeast Asian Water; one of the Southeast Asian Global Ocean Observing System (SEAGOOS) pilot projects under the auspices of the IOC Sub-Commissions for the Western Pacific (IOC/WESTPAC).

MFAST is the first OFS in Malaysia to have a high-resolution ocean forecast data which is developed based on wave-tide-circulation coupled model established by the Laboratory of Marine Sciences and Numerical Modelling (MASNUM), FIO.

MFAST delivers up to 5 days forecast data of ocean current, temperature, surface wave and wind between 3 °S – 15 °N and 96 – 123 °E at 3 hours interval.

MFAST offers comprehensive, continuous, and reliable forecast data for marine-related activities, facilitating optimum operations in the marine environment, such as marine surveillance, navigation, search and rescue operations, recreation, and scientific exploration in our region

<http://ofs.hiroshiaki.cloud/> (temporary, will update once permanent website acquired)