# Badge III: Subsea Electrification
# UH Faculty Modules

## 3C) Subsea Electrical Systems

***Key Priorities***

- Introduction to subsea electrical system: Architecture and components
- Functions of the subsea components- transformers, frequency converters, Bundled subsea power cables, HV subsea power connectors
- Power transmission to subsea systems, AC and DC systems
- Electric machines and power electronics for subsea systems and challenges.

***Key Learnings***

- Getting overall understanding of the subsea electric systems and its importance
- Understanding the challenges for using electric systems in subsea environment
- Understanding the electric components and architectures for electrification of subsea systems

## 3E) Subsea Power Transmission

***Key Priorities***

- Introduction to general power transmissions.
- Powering the offshore and subsea loads from onshore power.
- Local consumptions of offshore energy via offshore microgrids.
- Transmitting the offshore energy to the onshore grid.
- Overview and comparison of AC transmissions vs DC transmissions.
- Offshore energy transmission in the form of hydrogen energy.

***Key Learnings***

- Getting an overview of power transmission, AC versus DC.
- Understanding local consumption and transmission to onshore for offshore energy.
- Understanding the bi-directional energy transmission between onshore and offshore loads/sources.