

Design, development, and delivery of the first blended distance learning I.H.O.-recognised hydrographic survey program

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The IIC S-5 Category B Hydrographic Surveying Program is the first blended distance learning program to be recognized by the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC).

Background

The International Hydrographic Organization, together with many other regional and global entities, is responsible for the consistent international adoption of appropriate methods for hydrographic surveying and the development of hydrographic science.

IIC Technologies provides marine geospatial solutions and services around the world. IIC has employees on five continents and counts over two dozen hydrographic agencies as clients. We provide marine services covering MBES and Bathymetry LiDAR surveys, hydrographic data processing, cartography, training, consulting, and solutions. As part of our training specialty, IIC has offered a recognized S-5 Category B Hydrographic Survey Program since 2014 as a traditional in-class delivery. In early 2021, with COVID-19 making in-class learning difficult, IIC pivoted to a blended distance learning model, with virtual classrooms for the theory combined with onsite practical portions and final project. For the onsite practical and final project portion of our S5, IIC partnered with Deakin University, located in the state of Victoria in Australia.

Objectives

The aim of the IIC S-5B program is to train and equip candidates with the knowledge, practical competencies and skills necessary to support confidently and effectively the planning, data processing and analysis of hydrographic surveys. To accomplish this goal, IIC fostered a quality learning environment that meets the IHO IBSC S-5B Standard (S-5B) by offering a flexible and modular program.

Methods

Stakeholders adapted to the pandemic realities by front-loading the distance learning portions and doing the practical/final project at the end (in calmer COVID environment). The S5B Hydrographic Surveying Program is designed to maximize the advantages of online delivery, especially considering the circumstances imposed on us by COVID-19. The program, delivered in partnership with Deakin University, is designed and built to lead the students into the subjects with increasing levels of difficulty. The first two modules are introductory with mostly demonstrations. The remaining theory modules provide the solid scientific basis while introducing practical work. Finally, practical modules reinforce the theory underpinning the topics and are progressive from supervised sessions through to autonomous work.

Results

The teaching methodology allowed a truly global audience to undertake the program who may not otherwise have been able to attend an on-site program, mostly from the convenience/less-expensive comfort of home.

Discussion

Accessibility was “baked-in” the design and development team's process; to create materials that are useable to a wider audience, and based on WCAG 2.1 accessibility standards. The distance learning portions were facilitated through the use of online meeting software, a Learning Management System (LMS), and virtual machines for the intensive data processing online practical training.

Conclusion

The challenges encountered, and the solutions found were in adapting our teaching methods to the technology, as opposed to trying to adapt the technology to our teaching methods. Next course begins Sept 2022.