The Hydrographic Science Research Center (HSRC) at The University of Southern Mississippi was created to develop and broaden the applications of hydrography, ocean mapping and navigation technology.

**Research and Development**

The HSRC, with government partner NOAA Office of Coast Survey, is developing techniques and procedures for the use of unmanned surface vessels in hydrographic operations. A NOAA grant provided HSRC with a 5 meter unmanned surface vessel that will be a test and development platform for new sensors and instruments while providing insight into autonomous operations.

**Tailored Hydrographic Instruction**

Drawing on the University’s established leadership as an International Hydrographic Organization (IHO)/International Federation of Surveyors (FIG)/International Cartographic Association (ICA) Category A Certified hydrographic science education program, the HSRC can provide classroom instruction and hands-on training on virtually any aspect of hydrographic data collection, data processing, data management, and product generation. With a holistic view of hydrography from equipment installation through hydrographic production, training can be tailored to suit the client’s needs.

### Specific Areas of Expertise

- **Hydrographic vessel configuration**
  - Equipment installation
  - Calibration
  - Software configuration
  - Vessel configuration survey

- **Hydrographic data collection**
  - Single beam echo sounders
  - Side scan sonars
  - Multibeam echo sounders
  - Phase differencing swath bathymetry sonars

- **Hydrographic data collection and management**
  - QINSy
  - SonarWiz
  - Fledermaus
  - HyPack
  - Caris

- **Precise positioning**
  - Static processing techniques (Network, single baseline and Precise Point Positioning solutions)
  - Real Time Kinematic GPS

- **IHO and international organizational relationships**

- **Nautical Science**

- **Tides and water level theory and measurement**

- **Acoustics**

- **Hydrographic survey specifications and reports**

- Real Time Gipsy GPS
- Post Processing Kinematic GPS
- Post Processing Kinematic Precise Point Positioning

EOE/F/M/VETS/DISABILITY

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