Course Outline
GGE 5072 Hydrographic Data Management
January, 2011

Principles and use of hydrographic data management tools which acquire, clean, store, retrieve, select, interpolate, determine uncertainty, colour-code, and visualize individual and aggregated high density observed depth data points. Hydrographic data layering, analysis, artificial illumination, texturing, and animation. Visualization requirements and standards for safety of navigation.

Prerequisites: GGE 3353, GGE 4403.

Lectures Topics

Hydrographic Survey Planning (review)
Hydrographic Survey Standards
Geospatial Metadata

Data Collection - Multibeam Sounding Geometry
Data collection - Calibration (patch test)
Data Collection - Depths
Data Collection - Currents, Tides & misc
Data Collection - Real-time quality assurance

Data Processing- Conversion & Filtering
Data Processing - Line based editing
Data Processing - Area based editing
Data Processing - Uncertainty determination
Data Processing - "Fixing" bad data
Data Processing - Data gridding and tiling

Data Presentation - Field sheets
Data Presentation - Paper (raster) Chart
Data Presentation - Vector charts
Data Presentation - Uncertainty
Data Presentation - Alternate data presentations

Data Distribution Models

Laboratories

Multibeam Data Editing

- CARIS HIPS
- Ocean Mapping Group Swathed

- QPS Qinsy and Qloud

Data Gridding and Tiling
- CARIS HIPS
- Ocean Mapping Group weigh_grid
- QPS Qloud

Post Survey Data Analysis
- Ocean Mapping Group Swathed (wobble analysis)
- HIPS
- Qcloud

Vector Chart production
- CARIS
- ESRI Nautical Tools
- QPS Qomposer

Instructor contact information

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Lecture and lab schedule

Lecture hours: 2 hours per week, meeting times to be determined
Lab hours: 3 hours on alternate weeks, time to be determined

Grading scheme

Labs: 40 %
Midterm: 20 %
Final exam: 40 %

You must pass the final exam to pass the course. Numeric to letter grade conversion will be done using the following conversion scheme:

A+	A	A-	B+	B	B-	C+	C	D	F
90-100	80-89	75-79	70-74	65-69	60-64	55-59	50-54	45-49	0-44