This course has been modified to fulfill **USP2015-COM3**. In a degree analysis it counts automatically as a WC under USP2003. The course meets all seven of the following Student Learning Outcomes:

1. Use the discourse of a discipline or interdisciplinary field to communicate that field’s subject matter to academic or professional audiences through written, oral, and digital communication.

- *three short reports*

*- five full reports at professional standard level including high level data fitting*

*- eight ~20 minute oral prelabs, three inlabs, two oral exams*

*- one seminar style 15 minute oral presentation at beginning of term about equipment w/ Q/A*

- *IT: exploring Origin data analysis packet, Windat and Chaos experiment PC control software*

1. Find, analyze, evaluate, and document information appropriately as applicable to the discipline, interdisciplinary field, or professional setting as demonstrated by completing a substantial communication project that requires appropriate research skills.

- *each report’s introduction section requires extensive literature research; rules for citing, quoting trained in special 3 hour lecture (see below).*

1. Recognize and evaluate more advanced aspects of communication that respond to the purposes and needs of audiences in a discipline, interdisciplinary field, or professional setting.

- *special three hour interactive lab report lecture defines audience of reports and sets rules how to address audience appropriately*

*- seminar style report on equipment trains different audience specific presentation rules and skills*

*- audience changes between prelab, inlab, seminar, and oral exam*

1. Make effective use of multiple drafts, revision, computer technology, peer and instructor comments, and collaboration to show understanding of communication standards in a discipline or interdisciplinary field.

*- two reports uses draft deadlines, explicit and specific feedback and re-submission deadlines*

*- data fitting individualized on Origin software package where students have to develop their own fit routines*

*( e.g. nuclear experiment – three to four Gaussian peaks with different coupled heights, positions, and widths overlap with 1/f background noise and continuous Compton spectrum), one hour training lecture*

1. Observe the accepted conventions of spelling, grammar, organizational structure, punctuation, delivery and documentation expected in disciplinary, interdisciplinary, or professional contexts.

*- six hours of interactive lectures on report writing with real time exercises and commented example reports and three hours of interactive lectures on citation, quotation, and plagiarism*

1. Deliver presentations in a confident and professional manner, consistent with the standards of the discipline or interdisciplinary field.

*- eight ~ 20’ oral prelabs and three ~ 10’ inlabs, one oral midterm prepare and train the student for the 1 ½ hour final oral exam; seminar with question and answer sections, 15’ presentation styled after scientific conferences*

1. Interact effectively with audience members, engage opposing viewpoints constructively, and demonstrate active listening skills.

*- equipment seminar has question and answer section; student topics overlap to guarantee all students have something to contribute and question during discussion.*

*- pre-labs are interactive discussions, exams professional conversations (see below)*