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**CH 324.** QUANTITATIVE ANALYSIS (4 credits). Gbad 309, T R 9-3:50.

**Description.** Chemistry 324 is a basic course in modern chemical analysis, taught in a self study format and evaluated via on-line homework and exams. The lab is open two days a week. Students work at their own pace with some intermediate deadlines. There are ten laboratory experiments, which students pass by determining an unknown composition within a specified tolerance; thirteen homework sets, the answers to which are submitted online; and three in-class tests.

**Prerequisite:** CH 123 or CH 223 or CH 226H (Enforced). CH 130 does not meet the prerequisite for this course. Other prerequisite: one year of college chemistry or instructor approval.

**Schedule:** Lab is open 9-3:50, Tuesdays and Thursdays. Students are asked to reserve 8 hours per week, in large blocks, for in-class laboratory work, 1:1 instruction, and written tests.

**First day of class:** First Tuesday of the term: Check in at 09:00, 11:00 or 14:00 in GBAD 309 for orientation lecture.

**Texts:** Daniel C. Harris. Quantitative Chemical Analysis, Current Edition. W. H. Freeman and Co., New York. (Available at OSU Bookstore.)

*Laboratory Manual for CH 324.* Department of Chemistry, Oregon State University, Corvallis, Oregon. 2009. (Available at the lab.)

**Course Objectives:** By the completion of this course, students are expected to...

1. Describe the principles by which the signal is related to the concentration in instruments for UV-visible spectrophotometry, atomic absorption spectrophotometry, fluorometry, ion-selective electrode potentiometry, gas chromatography, and high performance liquid chromatography, and use the instruments to determine concentrations within a specified tolerance.
2. Convert quantities from one set of units to another, and use volumetric labware appropriately to prepare accurately and precisely solutions of known concentrations and dilutions.
3. Describe the principles of sample preparation, including digestion, extraction, fusion, ashing, drying.
4. Maintain a record of laboratory work in a notebook that is complete enough and well enough organized that the student can explain and defend the work one year after it is completed.
5. Be able to work through elementary trouble-shooting exercises to determine the problems and solve them in the quantitative analytical chemistry laboratory.

**Expectation for Student Conduct** - <http://oregonstate.edu/admin/stucon/achon.htm>

**Accommodations for Students with Disabilities.** Accommodations are collaborative efforts between students, faculty and Services for Students with Disabilities (SSD). Students with accommodations approved through SSD are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through SSD should contact SSD immediately at 737-4098.