

Chem 778 Course Outline - Winter 2011, 2nd Half (Mar-Apr)

Solid State Surface Science

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This course is **open to students from all departments with a background in the physical sciences or engineering** with an interest in surface analytical techniques. It is the purpose of the course to inform the students about available techniques and provide insight into the limitations and benefits in order to enable the students to apply these techniques to their own research.

Classes are held Tue, Thu, 15:30 - 17:00 in ABB-A404, starting 01 Mar 2011, ending 07 Apr 2011.

Content

Lecture 1: Surface structure

Lecture 2: Adsorption

Lecture 3: Surface reactions

Lectures 4-6: Optical spectroscopies (student presentations on selected topics)

Lectures 7-9: Electron spectroscopies (student presentations on selected topics)

Lectures 10-12: Particle beam techniques (student presentations on selected topics)

Suggested Reading:

- D. J. **O'Connor**, B. A. **Sexton**, R. St. C. **Smart** (Editors), Surface Analysis Methods in Materials Science, 2nd Edition, Springer Verlag, 2003, ISBN 3-540-41330-8

- D. P. **Woodruff**, T. A. **Delchar**, Modern Techniques of Surface Science, 2nd Edition, Cambridge University Press, ISBN 0-521-42498-4 (paperback)

Grading

Each student taking the course will give three 40 min talks and answer all related questions, each worth 26%. Each class period (except the first) starts with a brief quiz worth 2%. $3 \times 26\% + 11 \times 2\% = 100\%$.

You are expected to actively participate in the all discussion periods following each student presentation. During the first day of class, each student chooses the topics in consultation with the instructor. You are responsible for distributing copies of your overheads to everybody participating in the class one class period *before* your presentation.

Disclaimer: Changes to the course schedule and marking scheme may be made at the discretion of the instructor and announced to the students at any time during the course. An effort will be made to keep inconveniences from changes to a minimum.

Academic dishonesty: Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at http://www.mcmaster.ca/senate/academic/ac_integrity.htm

In particular reference to the expected student work in this course, properly reference your sources for the talks you are giving. If you took a shortcut in the preparation of your talks, it will likely show during question period, so don't even try...