Index of 0-L: Introduction to the VHM 802 course

Practical Information

Welcome!!

Major news:

- to find latest course information. . . → web page for VHM 802:

  `stryhnstatistics.ca/vhm802`

- to "connect" yourself to the course (information, discussion. . .) → log into the Moodle account for VHM 802 (`VHM-8020-02` at `moodle.upei.ca`),
- despite VHM 812 (Epidemiology II) not being offered, the VHM 802 course layout is still as if the first 5 weeks (and 1 week in March) were shared with VHM 812,
- VHM 802 should be for 3 credits (maybe check with the Registrar's Office),
- proposed focus of course: experimental design.

This video — Introduction to course logistics:

- demonstrations of where to find and do stuff,
- main topics: textbook, software, marks, and choice of course focus,
- also a statement of (and reflection on) the course objectives.

Course Website and Moodle Sites

Course webpage/site (`stryhnstatistics.ca/vhm802`):

- the primary source of information:

  schedule, lectures, labs (data and solutions), assignments, and links to websites of previous years,

- dynamic page/site: continually updated (so check back for updates),
- please tell me if something is missing or not working.

Moodle site for "2025W VHM−8020−02" (should be in your Moodle account):

- Discussion forum to view and participate in discussions,
- (later on) links to home assignments and other assorted other course material,
- Moodle page for "2025W VHM−8020−03" will not be used.

Assignments and Exam for the Course

The course mark is made up by:

* home assignments for a total of 40% (not individually marked),
  * 6 home assignments in total,
  * tentative deadline dates: 29/1, 17/2, 3/3, 17/3, 28/3, and 7/4,
* project (30%):
  * practical data analysis using the methods of the course, preferably using your own data,
  * course report and presentation to the class on April 10,
  * deadlines — project outline: March 14, report: April 9,
* final exam (30%):
  * April 17 (tentative date), in-class 9am-12pm (open book, but no computer),
  * covers all sessions and involves practical data analysis from statistical software output.

Two Course Versions/Focuses

Traditional focus on experimental design and data analysis:

- experimental design much expanded from the basics covered in VHM 801,
- multifactorial analysis discussed in more detail than in shared part with VHM 812,
- random effects models and repeated measures analysis discussed in detail, much more than in the one week shared with VHM 812.

New focus on multivariate methods (first run in Winter 2021):

- an introduction — focused more on ideas and principles than on technical details,
- topics covered (with some flexibility to student wishes):
  - distance-based methods, e.g. cluster analysis[1] and multidimensional scaling, including also space-time clustering methods (SaTScan approach),
  - dimension-reduction methods, e.g. principal components and factor analysis,
  - multivariate inference, e.g. MANOVA (multivariate ANOVA),
- some experimental design material retained (but much reduced).

Based on our preliminary discussion, the default choice is for experimental design.

[1] Not at all! the same as clustering arising from (hierarchical) data structure in the shared part with VHM 812.

Textbooks and Software for the Course

Multiplicity is the reality — let's see it as an opportunity instead of a challenge:

- different topics require different textbooks and to some extent different software,
- the two courses and focuses have different emphasis, for both textbook and software.

Textbooks:

- for regression (shared with VHM 812), use primarily VER2 (Veterinary Epidemiological Research, 2nd ed.); students in VHM 802 only will be provided suitable excerpts,
- for experimental design and multifactorial analysis, use primarily Oehlert's book (A First Course in Design and Analysis of Experiments; downloadable as .pdf),
- for multivariate analysis, use primarily Manly & Alterto's book (Multivariate Statistical Methods: A Primer, 3rd/4th ed.) — a non-technical introduction.

Software — no required software, but

- both Minitab and Stata will be covered for regression (shared parts with VHM 812)[2],
- lectures on experimental design and multifactorial analysis will for simplicity use Minitab, but similar analyses can be obtained in Stata and R[2],
- for multivariate analysis, lectures will, where feasible, utilize Minitab and Stata[2].

[2] The VHM 802 website will offer coding support for Minitab, Stata and R for most methods covered in course.