

505-940 Linear Models

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| Credit Points: | 12.50 |
| Level: | 9 (Graduate/Postgraduate) |
| Dates & Locations: | Distance |
| Time Commitment: | Contact Hours: None Total Time Commitment: 8-12 hours total study time per week |
| Prerequisites: | 505-106 Epidemiology (EPI) 505-105 Mathematics Background for Biostatistics (MBB) 505-107 Principles of Statistical Inference (PSI) 505-975 Probability and Distribution Theory (PDT) |
| Corequisites: | None |
| Recommended Background Knowledge: | None |
| Non Allowed Subjects: | None |
| Core Participation Requirements: | <p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p> |
| Contact: | Professor John Carlin, University of Melbourne Professor Andrew Forbes, Monash University Biostatistics Collaboration of Australia School of Population Health, University of Melbourne |
| Subject Overview: | The method of least squares; regression models and related statistical inference; flexible nonparametric regression; analysis of covariance to adjust for confounding; multiple regression with matrix algebra; model construction and interpretation (use of dummy variables, parameterisation, interaction and transformations); model checking and diagnostics; regression to the mean; handling of baseline values; the analysis of variance; variance components and random effects. |
| Objectives: | To enable students to apply methods based on linear models to biostatistical data analysis, with proper attention to underlying assumptions and a major emphasis on the practical interpretation and communication of results. |
| Assessment: | Two case study assignments to be submitted during semester worth 35% and 40% respectively (approx 12 hours work each). Submission of selected practical exercises throughout the semester worth 20% in total (approx 10 hrs of work)Contribution to online quizzes worth 5% (approx 6 hrs of work) |
| Prescribed Texts: | Resources Provided to Students: Printed course notes and assignments by mail, email, and online interaction. Special Computer Requirements: Stata statistical software |
| Recommended Texts: | Kutner MH, Nachtsheim CJ, Neter J, Li W. <i>Applied Linear Statistical Models</i> . 5th edition. McGraw-Hill/Irwin 2005. ISBN 978-0-07-310874-2 |

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| Breadth Options: | This subject is not available as a breadth subject. |
| Fees Information: | Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees |
| Generic Skills: | Independent problem solving, facility with abstract reasoning, clarity of written expression, sound communication of technical concepts |
| Links to further information: | http://www.sph.unimelb.edu.au |
| Notes: | This subject is not available in the Master of Public Health. |
| Related Course(s): | Master of Biostatistics Postgraduate Certificate in Biostatistics Postgraduate Diploma in Biostatistics |