

| Title of course : Applied biostatistics : analysis of medical science data (II) | | |
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| Number of hours | 12h CM (lectures) - 2hTD (exercises) - 2h TP (practicals)- 8h project | Semester : 2 |
| Number of ECTS | 3 ECTS | |
| Teacher | Melanie White-Koning | |
| Aims | <p>The aims of this course are to enable students to</p> <ul style="list-style-type: none"> - Acquire the statistical knowledge required to design a study protocol (experimental and observational studies) - Know how to write a statistical analysis plan (methodology, assessment criteria, hypothesis tests, randomisation plan) - Know how to analyse and interpret the results of a statistical study (parametric and non-parametric tests, introduction to modelling). | |
| Content | <p>Reverse teaching, lectures, practicals, individual projects of analysis of personal experimental data (R software)</p> <p>Chapter 1 : Main distributions and their uses</p> <p>Chapter 2 : Point estimates and confidence intervals</p> <p>Chapter 3 : General principles of hypothesis testing</p> <p>Chapter 4 : How to verify whether a distribution is normal (Gauss)</p> <p>Chapter 5 : Parametric statistical tests</p> <p>Chapter 6 : Linear and logistic regression (univariate and multivariate modelling)</p> <p>Chapter 7 : Analysis of variance (ANOVA) (introduction to experimental design)</p> <p>Chapter 8 : Non-parametric statistical tests</p> <p>Chapter 9 : Introduction to survival data</p> | |
| Assessment | 100% final exam | |
| Pre-requisites | Basic notions in statistics and/or having followed the course « Statistiques de base pour biologistes (I) » | |
| Keywords | Parametric and non-parametric statistical tests. Modelling. Analysis of survival data. | |
| FTLV (Y/N) | Y | |
| Competencies | <ul style="list-style-type: none"> - Know how to identify a hypothesis and set up a study protocol (experimental and observational studies) - Know how to write a statistical analysis plan (methodology, criteria, hypothesis tests, randomisation) - Be critical about the methodology of science articles and know how to correctly interpret the results of a scientific study | |
| Core competencies | <p>Developing and integrating specialised knowledge (Statistics)</p> <p>Advanced and specialised use of numerical tools (statistical methods and specialised software)</p> <p>Specialised communication for the transfer of knowledge (identify, select and analyse in a critical manner)</p> | |