General courses and training

Information for PhD candidates

Utrecht University
Graduate School of Life Sciences
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1 Preface

Dear PhD candidate of the Utrecht University Graduate School of Life Sciences,

Students based in the Graduate School of Life Sciences are able to attend a wide range of activities designed to build on their research skills and experience and improve employability.

Improving your research and transferable skills will help you in many aspects of your life and specifically will help you to be more successful in your current degree or research project and in making the next move in your career.

Informal opportunities to develop your transferable skills surround you all the time in Utrecht University and UMC Utrecht, but the Graduate School of Life Sciences also provides a programme with training in PhD programmes throughout the year. In addition, there is a range of courses in more general subjects.

In this guide we have a listed some of them. We are in the process of extending the list and always welcome suggestions of other top courses and trainings.

Please note that this document was designed primarily for online use and will be updated regularly. The most recent copy can be found at www.uu.nl/lifesciences.

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Utrecht University Graduate School of Life Sciences
April 2014
2 Scientific courses

2.1 Digital Pictures: Data integrity and display
Organized by: Graduate School of Life Sciences, MSc/PhD programme Cancer, Stem Cells & Developmental Biology.

Aim/Goal: In this course we will focus on what you can do and what you shouldn’t do to get the best representation of your digital image without altering the actual data. The course will be given in an interactive way, with time for practicing on assignments on laptops (provided).

Description of the course: The output of scientific experiments often comes in the form of digital images, e.g. scans of Western blots and microscopic images. This certainly has a lot of advantages, because digital images can contain spatial information and can be more telling than plain numerical data. A disadvantage of data in the form of digital images is that they can, often unintendedly, be manipulated using computer software in a way that is not in agreement with scientific standards. The first day we will go into some theory behind digital images and practice with two different image processing software packages. The second day we will go more into presenting your images in publication quality figures and/or presentations using vector based software. There will be a pre-course assignment to start getting a feeling for working with images. As a final assignment the students will hand in a publication quality figure made from images provided at the course.

Study load: Pre-course assignment, two days of interactive practicals and assignments, and one final assignment.

Credits: 1 EC.

Certificate of participation: Upon request.

Costs: free of charge for all students within one of the PhD programmes of the Graduate School of Life Sciences.

Dates: (at least) once a year.

Registration: Register online on the website of the CSDB programme.

Website/more information: www.cgdb.nl/courses.

2.2 Genomics and DNA Technology
Organized by: Faculty of Veterinary Sciences, Utrecht University.

Aim/Goal: Several techniques will be discussed and will be performed by the participant.

Description of the course: During the practicals and tutorials the following subjects will be addressed: data mining, DNA and RNA isolation, PCR, TR-PCR, quantitative PCR, sequencing, western blotting. The seminars will be presented by experts in the field and include the following topics: genomics, functional genomics, molecular genetics, high-throughput technologies, and historic DNA. Normally, this course is taught in Dutch. It is possible that this course is taught in English depending on the needs of the participants.

Study load: Intensive workshop of one week, including: seminars, practicals/experiments, exercises, tutorials, and guest lectures.

Credits: 1.5 EC.

Certificate of participation: Yes.

Costs: €1.000,-.

Dates: Once a year in August/September (contact the coordinator for exact date).

Registration: Send an email to the course coordinator (J.A. Lenstra).
2.3 Photoshop and Illustrator CS6
Organized by: Graduate School of Molecular Medicine, Erasmus MC, Rotterdam.

Description of the course:
In this workshop you will learn to create a figure with imaginary data from different file-types, such as: ppt, pdf, psd, tiff, jpg and eps. We will be adding pictures and tables into one figure meant for publication. We will be correcting pictures and images for colour and learn about the difference between CMYK and RGB. And we will be importing and exporting data, such as images and figures, to and from Photoshop and Illustrator. It is possible to bring your own images as well. The second day will be partly about modifying your own images. Web: www.molmed.nl.

3 Communication

3.1 Writing in English for publication – Babel Talen
Aim/goal: The aim of the course is to enable you to produce a piece of written academic discourse by improving awareness of organization, cohesion and use of language.

Description of the course: The course will focus on writing an academic paper with a view to publication. This involves analysing its information and language conventions. We will analyse model texts and look at useful language for the different sections of a paper. We will discuss grammatical structures, punctuation, the use of linking words, and differences between American and British spelling. The course also covers writing a letter to the publisher. Course contents are adaptable to your needs. It is essential to have a draft version of your English text ready at the beginning of the course. Bring the text to the first session.

Details: 7 sessions of 3 hours.
Cost: € 225,-
Frequency: at least 8 times a year.
Location: University College Campus, Utrecht (Campusplein 7).
More information and registration: on the Babel website.

3.2 Relevant and clear: Science Communication Course for PhD students
Organized by: Freudenthal Institute for Science and Mathematics Education, Liesbeth de Bakker MSc.

Aim/Goal: During the course you learn the principles that govern science communication to a general audience. You also implement this knowledge in two concrete communication products about your own research: a short interactive presentation, which will be held on a public event, and a popular scientific article. The course is based on the principle of ‘social learning’. This means that participants learn a lot from and together with each other through feedback sessions. On the basis of science communication theory, personal experience, reflection, and analysis of a range of different example cases, you develop your own specific communication products.

Description of the course: Course sessions take up three full and two half days over the course of a month. During that month, course participants should set aside four more days to prepare and
revise their presentation and article. In addition to a trial-run presentation for the course group, the presentation will also be given at a public event for a general audience.

**Nr of participants:** Max. 8.

**Study load:** Three whole days and two half days, presentation at a public event.

**Credits:** 3 EC.

**Certificate of participation:** Course participants who successfully finish the course will receive a certificate. This certificate can only be obtained if all course sessions have been attended and both communication products have been handed in and are of sufficient quality.

**Costs:** €400,-.

**Registration:** Liesbeth de Bakker, MSc. Freudenthal Institute for Science and Mathematics Education. P.O. Box 80000, 3508 TA Utrecht, e.p.h.m.debakker@uu.nl.

**Website/more information:** Liesbeth de Bakker, MSc. (e.p.h.m.debakker@uu.nl).

Download the flyer in English: [Relevant and Clear course](2013, PDF).

Download the flyer in Dutch: [Relevant en Inzichtelijk](2013, PDF).

### 3.3 Writing for academic publication in the veterinary and life sciences (for PhD candidates of the faculty of Veterinary Medicine only)

**Aim/goal:**
- Planning and drafting your research article or conference paper;
- Writing and editing more purposefully, applying practical insights from genre research, psychology, reading (and writing) research, academic publishing and other areas;
- Finishing the paper, and submitting it to a conference or a peer-reviewed journal or (for proposals) a funding agency;
- Publishing (or receiving funding).

**Description of the course:** Small, friendly workshops based on your current writing project. Access to the instructor (an experienced editor) both in person and by email outside class time. Personalized follow-up (by email) both during and after the course period. Course material based on research on scientific writing; assignments all based on your paper. Taught in English, useful for all levels of English including native speakers. The course is about writing, editing and publishing scientific papers, not English-as-a-foreign-language. Individual questions about English usage will be answered, but this is not the focus of group sessions.

**Study load:** 10 afternoon sessions (excluding preparation).

**Credits:** 2 EC.

**Costs:** €835,-.

**Dates:** Twice a year (see website for details).

**Registration:** registration form on to the website with [PhD courses of the faculty of Veterinary Medicine](#).  

**More information/website:** Teacher: Dr. Linda McPhee and website with [PhD courses of the faculty of Veterinary Medicine](#).

### 3.4 Presenting in English for PhD researchers (for PhD candidates of the faculty of Veterinary Medicine only)

**Aim/goal:** This two-day course is designed to help you develop your speaking and presentation skills. It provides opportunities for learning through oral presentations, listening, discussion and reflection.
Description of the course: Each participant is expected to give two 10-minute oral presentations: one in the first meeting and one in the second meeting. You will receive feedback on your performance. Practice activities (oral presentations) and awareness-raising activities (presentation feedback; sharing experiences; reflecting on presentational skills; tips for refining skills and developing new ones). Pre-course preparation: Shortly before attending the course, you will receive the hand-out ‘Tips for preparing oral preparations’. You are invited to read this hand-out before the course and prepare a 10-minute research-related presentation for the first meeting. Please do not prepare and use a full script. Please prepare a 10-minute presentation geared towards your fellow participants (i.e. a mixed-background audience).

Nr. of participants: max. 6.
Study load: Two days of six contact hours each.
Credits: 0.5 EC.
Costs: €425,-.
Dates: Twice a year (see website for details).
Registration: registration form on to the website with PhD courses of the faculty of Veterinary Medicine.
More information/website: Teacher: Margo de Wolf and the website with PhD courses of the faculty of Veterinary Medicine.

3.5 Academic Writing in English for PhD's and postdocs
Organized by: Premier Taaltraining, native speaker Taylor Krohn.

Aim/goal: Academic Writing in English teaches students how to improve the quality and professionalism of their writing while analysing and editing the work(s) they intend to publish. Students learn how to communicate a message clearly and effectively to an academic or scientific audience by applying the techniques presented in the course.

Description of the course:
– crafting better sentences and paragraphs;
– reducing wordiness and improving readability;
– finding the appropriate level of formality;
– tense use and verb structures;
– grammar and punctuation review;
– dialects of English (American vs. British);
– letter and email writing conventions.

Study load: 6 x 3 hours per week, 3 hours of self study per meeting.
Credits: 2 EC.
Certificate: You will receive a certificate of participation if you attend at least 5 out of 6 meetings.
Costs: €350,-.
Date(s): see website Premier Taaltraining.
Registration and information: Registration or more information by email taylor@premiertaaltraining.nl.

3.6 Write it right - two-day workshop
General information: Christopher Lowe and Gadi Rothenberg are organizing a two-day ‘Write it Right’ (WiR) workshop at the Holiday Inn conference centre in Leiden. This workshop is intended for
PhD students, postdocs and researchers. It covers structured writing, technical English, optimal and correct presentation of figures and tables, and handy tips on the writing and publishing process.

**Draft manuscript and workshop details:** Each participant uploads a two-page draft manuscript (a PDF file). This draft manuscript should be prepared using the WiR template. We then read all drafts and give each participant specific comments on his/her writing style and presentation. During the workshop, participants listen to lectures, perform various exercises, and write a mini-version of their own manuscript, which is then peer-reviewed. A prize is awarded for the best manuscript. Each participant also receives a syllabus with exercises and tips about the writing and publishing procedure. The two-day workshop also includes an additional special focus on posters.

**Registration and workshop fees:** All participants must register on the WiR website, and pay the workshop costs. This includes all teaching materials, lunches, and refreshments during coffee breaks. Placement is on a first come, first served basis. Max 30 participants. For more info see http://write-it-right.org or e-mail info@write-it-right.org.

### 3.7 Analytic Storytelling

**Course description:** Analytic Storytelling is a storytelling method for people working with complex content. As a researcher you have to collect, analyze, and structure complex information into a coherent story. But you also have to communicate all your findings, be it in the form of a presentation, a paper, or funding application.

The crucial, yet challenging task is to deliver a clear and convincing message that will stick with your audience. To carry out this task successfully, Analytic Storytelling combines two complementing approaches:

Analytic ~ organize your complex content into a clear and sound structure that captures everything it should (and nothing it should not!).

Storytelling ~ provide an appealing and sensible context so that your message will come across and stick with your audience.

**Learning objectives:** Based on argumentative theory as well as on insights from cognitive science, you will learn to organize your complex content into a clear and sound structure that serves as a solid base to write a paper, a grant application, or build a presentation.

You will acquire skills to:

1. structure your information correctly and clearly;
2. be to the point throughout your story;
3. adapt well to your audience.

Using these skills you can adapt your story to any type of communication and also any type of audience: scientific articles, grant applications, or conference presentations; for colleagues or for a laymen audience.

**Teaching method:** The course consists of theory and a lot of exercises to put the theory immediately into practice. The second day of the training you will work on the story of your own (PhD-) project. You will receive extended feedback on your exercises as well as on the storyline of your own project.
How to register: Registration is possible on our webpage. All training sessions are being held in Utrecht center. Check out our webpage to stay informed on new training dates, or send us an email so we can inform you if new dates have been announced.

About the trainers:
Stijn Cornelissen is a University of Twente alumnus in nanotechnology. He is a trainer in clear thinking and clear communication in research, government and industry.

Priscilla Brandon is a philosophy graduate of the University of Amsterdam, specialized in argument structure. Next to her training activities, she does research on personal identity and narrativity at Radboud University Nijmegen.

Arnaud Bom studied philosophy at the University of Amsterdam and creative writing at the Rietveld Academie. He is a copywriter and trainer specialized in storytelling, text structure and clear language.

4 Personal Development

4.1 That thing called Science
Organized by: Graduate School of Life Sciences.

Aim/Goal: To get a broader view on science, its roots, its place in society and much more!

Description of the course: In this course, several aspects - sociological, historical, ethical and philosophical - of biomedical science will be discussed. During each session two speakers, who are experts in their field, will set the scene for a highly interactive session.

PhD students in Life Sciences, preferably in their 2nd or 3rd year, are welcome to attend this course. There are 9 sessions in total; attending and participating in at least 7 of these sessions will be rewarded with 1 credit. You are expected to be active as participant, which means that you prepare the topic and, even more important, that you take part in the general discussion. Also, we expect commitment to the course, which means that the whole group is present during all sessions, from #1 to #9. The sessions always end with a happy hour, to strengthen the TTCS-community, and to be able to discuss the topics with the speakers, the faculty, and each other.

Study load: 9 sessions of 3 hours, time to prepare.
Credits: 1 EC.
Nr of participants: max. 45.
Certificate of participation: Yes, after attending and participating in at least 7 of these sessions.
Costs: free of charge.
Dates: January 31, February 28, April 4, April 25, May 23, June 27, September 26, October 31, November 28 (2014).

Registration and more information: If you would like to attend this course, please send an email to Mrs. Loes Sylaj (L.Sylaj-Brands@umcutrecht.nl), including the following information: Name, Address or "Huispost", E-mail address, PhD programme, Supervisor (promotor), in which year you started your PhD, and a short motivation (1/2 A4).
4.2 Effectief begeleiden van masterstudenten (in Dutch)
Organized by: Graduate School of Life Sciences.

Aim/Goal: De cursus is erop gericht in korte tijd enkele basisvaardigheden van het begeleiden van masterstudenten bij hun onderzoek onder de knie te krijgen.

Description of the course: In deze cursus komen de volgende thema’s aan de orde:
- wederzijdse taken en verwachtingen;
- begeleidingsmodellen en rollen: spanningsveld tussen begeleiden en beoordelen;
- fasering, ontwerp en planning van een begeleidingstraject;
- algemene gespreksvaardigheden;
- het voeren van specifieke gesprekken (zoals kennismakings- of voortgangsgesprek);
- omgaan met enkele moeilijke situaties (afgestemd op ervaringen van de deelnemers).

In 2 dagen worden bovengenoemde thema’s behandeld, waarbij het accent ligt op thema’s die door de promovendi zelf als belangrijk zijn benoemd in een vragenlijst die voorafgaand aan de training wordt ingevuld.

Study load: 2 dagen.
Credits: 0.6 EC.
Aantal deelnemers: minimaal 5, maximaal 12.
De cursus wordt geannuleerd als er minder dan 5 deelnemers zijn. Indien er meer inschrijvingen dan plaatsen zijn, worden de deelnemers geselecteerd zodat er voldoende spreiding over de verschillende masterprogramma’s is.
Costs: €250.

Dates:
Registration: Mail het ingevulde inschrijfformulier naar Ellen Visser (e.a.visser@umcutrecht.nl). Aanmelden kan tot twee weken voor aanvang van de cursus. More information: Mrs. Ellen Visser, e.a.visser@umcutrecht.nl.
Please note: This course is only offered in Dutch. Should you be interested in an English-taught course, please let us know!

4.3 Achieving your goals and performing more successfully during your PhD
Organized by: Graduate School of Life Sciences / Exergy Training.

Course description: This personal development course guides you through a variety of important—but often overlooked—concepts. The chief aim is to help you become more effective in your project. One PhD student described the course as “improving your ability to get things done, not just in your PhD project, but also in your subsequent career.” This is accomplished by providing insights about your personal strengths and behavioral drives, by teaching proven practices for goal-setting together with project management tools to help you achieve them, as well as discussing several communicative skills that let you get the most out of your environment and the people your work with. For an overview of the specific subjects refer to the course contents below. According to participants the sessions are best characterized as engaging, fun and open to interaction.
Contents: Over the course of four sessions this personal efficacy training covers a rich variety of important subjects:

Session 1
– Important guidelines for setting good goals;
– Identifying your goals in your work;
– Value systems and their impact on the behavior of yourself and those around you.

Session 2
– What drives you in your work and the pursuit of your goals;
– Understand what makes a good team, what causes conflicts and what are the characteristics of your own research group;
– Identify your behavioral strengths and learn how to apply these optimally.

Session 3
– Your personal skills and their development;
– Using non-verbal behavior and expectations to improve your own performance as well as the performance of the students that you supervise;
– Useful shortcuts for understanding complex behavior.

Session 4
– Instructing practices and pitfalls;
– Giving and receiving more useful feedback;
– Time management as a tool to improve your control over your day-to-day activities;
– Identifying threats in your project and strategies to adequately deal with them.

Course objectives
After this course, you will:
– Have acquired a valuable set of tools that will serve you in your work, such as the ability to set clear and effective goals, and to better manage time and risk;
– Have a clear sense of your drivers, strengths and skills, guiding your future (career) choices;
– Be more proficient in how you cooperate with people and how you interact with them in order to get things done.

Course location and dates
In 2014 a pilot is given on the following dates: June 10, 17, 24, and July 1. The course is given at the university campus. Participants are notified by email of the exact location, at least one week in advance of the first session.

Enrollment and costs
The cost for participation in this course is 580 euro (ex. VAT). You can enroll for this course by sending an email to contact@exergy-training.nl. Be sure to include the following information in your enrollment email:
– Your first and last name;
– Your university department and current group (or section);
– Your nationality;
– An invoice address (at your department) for us to send the invoice to;
– A purchase order number (or a similar tracking number) that we need to mention on the invoice for your department to be able to process the invoice.
**Teaching method:** The course provides an equal balance between theoretical background, discussions and exercises. It incorporates elements of psychology, drawing from the research of prominent scientists such as Paul Ekman, Edwin Locke, Piers Steel, Robert Rosenthal, and Richard Hackman, as well as personal efficacy best practices as identified by leading thinkers such as Peter Drucker, Stephen Covey and Jon Katzenbach. Finally, several elements are lifted from professional project management methodologies like PRINCE2.

The interactive group exercises will help you to develop a solid understanding of the covered topics by putting the theory to practice using your own personal examples. During the course participants are actively involved and encouraged to share their own experiences and insights.

**About the trainers:** Exergy was founded in 2009 by Michiel Jongerden and several other communication, training and coaching professionals. Exergy trains young professionals to help them get the most of their professional selves. Michiel is an organizational psychologist with a broad theoretical foundation in the art and science of training. He is a 3rd degree black-belt martial arts specialist. Occasionally he likes to incorporate elements from this sport in his training courses as engaging metaphors for more abstract concepts.

### 4.4 Management for PhDs and postdocs (in Dutch)

**Organized by:** Nederlands Instituut voor Biologie (NIBI).

**Aim/Goal:** For many PhDs and postdocs there is a high pressure of work. Research, both fundamental and applied, is hard to plan. Various tasks and responsibilities (education, supervising students etc.) have to be done at the expense of research time. Furthermore, publishing articles is very time-consuming. In short, work situations with planning issues.

During this course the following questions will be addressed:

- How do I get a grip on my own research project? And how much do I have to do?
- How do I change my insecurities (concerning what others think of me) into clear and firm agreements?

**Description of the course:** We apply a couple of basic principles of ‘Projectmatig werken’ to your own research project. Every participant makes a planning according to these principles for the coming period (e.g. 6 months). In addition, some professional basic skills and negotiation techniques will be addressed. This collaborating process is aimed at joint goals and maintaining close cooperation.

**Nr of participants:** 8-12.

**Study load:** Five half days with lectures and skill training.

**Credits:** 1 EC.

**Certificate of participation:** On request.

**Costs:** €750,- (€150,- discount for NIBI-members).

**Dates:** Three times a year (see website for dates of the course Management for PhDs and postdocs).

**Registration:** Registration form on website.

**Website/more information:** Management for PhDs and postdocs or contact Ingeborg Scheurwater by mail scheurwater@nibi.nl or phone 030-2343441 (Monday, Wednesday, Friday).
5 Entrepreneurship / biobusiness

5.1 Training Valorisation in Life Sciences
Organized by: UtrechtVC.

Description: UtrechtVC organizes various seminars, workshops, and training on research collaboration, entrepreneurship and valorisation. Check for specific details the UtrechtVC website.

5.2 Biobusiness Summer School
Organized by: Hyphen Projects.

Aim/Goal: Knowledge of the business field and the current market is important for all researchers in the rapidly growing life sciences area, but especially those who are looking for career opportunities in the industry. The aim of the BioBusiness PhD Summer School is to increase the understanding of the international field of biomedical business and to help PhD students and post-docs find the best next step in their career.

Description of the course: The one-week program of the BioBusiness PhD Summer School introduces you in the world of life sciences companies with interesting lectures by renowned speakers covering all-important basic and hot topics and takes you on several site visits to different international companies. The lectures and company visits have a very interactive character, and the course includes various networking opportunities. The course covers Product Development, Patents & Licenses, from start-up to IPO, Biopharma Business models, new market opportunities, Pharmacopolicy, Pharmacoeconomics, Business ethics, Entrepreneurship and many site visits.

Study load: One week of presentations, lectures, and site visits.
Credits: 1.5 EC.
Certificate of participation: Yes.
Costs: €950, (including course material, lunch and social programme).
Dates: This course is offered once a year during the summer (see website for exact dates).
Registration: Online registration on website.
Website/more information: www.biobusinesssummerschool.nl.

5.3 Organization and leadership for PhD students
Organized by: Utrecht University - School of Governance.

Aim/Goal: The goal of this course is to learn about organization processes and leadership.

Description of the course: Professionals such as PhD students are increasingly expected to take on a leadership role in the organization such as being a coordinator of a project. The course ‘Organization and Leadership’ is meant for PhD students who are interested in taking up this role in their present and future work. The course lasts nine days and give participants the opportunity to learn about organization processes (why are things organized, or not organized, as they are?) and leadership (how can I influence these processes?). In addition, course participants are given the opportunity to learn practical skills that can help them to function better in a leading role. During the course we will work with personal experiences of the participants, simulations, reflections, tests, role-play, theory exchange and assignments. Concrete examples will be used to explain theoretical frameworks. The perspectives and skills that are practiced in this course are directly applicable to present-day
professional practice (organization of the actual research project, supervising assistants, negotiations with clients etc.).

Study load: The course will take nine days.
Credits: 4 EC.
Certificate of participation: student must be present all nine days (100% attendance) to be awarded a certificate of completion.
Costs: ca. € 1950, - materials, coffee and tea included.
Dates: See website Organization and Leadership for PhD students.
Registration: see website Organization and Leadership for PhD students.
More information: Bianca Kooij MA, project-assistant (030) 253 9088 (b.t.m.kooij@uu.nl).

6 Statistics and Epidemiology

6.1 Introductory Biostatistics for researchers
Aim/Goal: The course provides an introduction to statistical methodology and supplies a number of statistical techniques important for practical data analysis.

Description of the course: Although active statistical knowledge is not a prerequisite, we assume some basic knowledge on statistics and mathematics acquired through, for example, courses in biostatistics in the bachelor programme. Examples from the medical and biological fields will be used in exercises. Datasets will be analysed on the computer using the statistical packages SPSS or R (for the interested). The first week covers the ‘Basics of Biostatistics’ and it concerns the normal distribution, standard error of the mean, statistical testing for one and two samples, confidence intervals, simple linear regression and correlation, one way analysis of variance, binomial distribution and proportions, analysis of contingency tables. The second week covers non-parametric statistics and an "Introduction to Modelling" and provides several modern statistical methods that can be used in the study of the relation between a number of explanatory variables on the one hand, and the occurrence of an outcome on the other. The second week starts with nonparametric alternatives to the tests that have been covered in the first week, using simple examples and a minimum of mathematics. Next, the most important regression models used in biomedical research are introduced. Some topics are: ANOVA, multiple regression, logistic regression, Cox regression.

Nr of participants: Max. 30. At least one month before the start of the course, you will receive a confirmation letter. If the course is full, you will be placed on a waiting list.
Study load: This is a 10-day course. In general, the daily schedule of our courses includes morning lectures from 09.30 to 12.30, followed by computer sessions in the afternoon from 13.30 to 17.00.
Credits: 3 EC.
Certificate of participation: After active participation during the whole course (morning and afternoon sessions) participants will receive a certificate.
Costs: see website.
Dates: Three times a year. Course dates are published on the website.
Registration: To register for one or more courses, please fill in the registration form which can be found on the website. Your registration will be confirmed by e-mail as soon as your registration form has been received.
Website/more information: See website or contact Bert Agterhuis by phone: 088-75-68635 or e-mail: secretariaatbiostatistiek@umcutrecht.nl.
6.2 **Introduction to Statistics and SPSS- E-learning**

**Aim/Goal:** At the end of this course, the participant has insight in / understands:
- the different types of variables (quantitative [numerical] vs. qualitative [non-numerical]);
- the ways in which data can be summarized graphically;
- the ways in which data can be summarized numerically (measures of location and dispersion);
- the different types of frequency measures (‘absolute’, ‘relative’ and ‘cumulative’ frequency);
- the basic principles of normally distributed data and the standard normal distribution;
- the basic principles of sampling of data and estimation based on samples;
- the basic principles of hypothesis testing;
- is able to perform simple statistical analyses in the statistical packages SPSS and R.

**Description of the course:** This course provides basic knowledge of statistics. The course is aimed to level differences in prior knowledge among students and provide the necessary base for the next two statistical courses (Classical and Modern Methods in Data Analysis).

**Nr of participants:** Max. 50.

**Study load:** Mainly e-learning, with lectures during one week of September.

**Credits:** 1.5 EC.

**Certificate of participation:** The participants should at least attend 80% of the course, prior to obtaining a certificate.

**Costs:** see website.

**Dates:** Once a year in September. Please note: There is large interest in this course. Students participating in the Epidemiology programme have priority.

**Registration:** Online application on [website](www.msc-epidemiology.nl).

6.3 **Classical methods in data analysis**

**Aim/Goal:**
At the end of this course, the participant has insight in / understands:
- the √n law and its consequences for sample size;
- the general principles of decision procedures (“testing”), and is able to apply these procedures in practice using common statistical packages (SPSS, R);
- the principles of the following statistical analysis techniques: Student T tests (1-sample, 2-sample and paired), Analysis of Variance (1-way and 2-way ANOVA), Simple and multiple linear regression analysis, 1-sample, 2-sample and paired proportion tests (χ² test for goodness-of-fit, Pearson’s χ² test and McNemar’s χ² test);
- the Kolmogorov Smirnov test (normal distribution) and the Fisher test for equality of variances;
- the terms ‘explained variance’ and multi-collinearity;
- the principles of model reduction in regression analysis;
- the basic principles of the technique of logistic regression analysis;
- the appropriate non-parametric technique to be applied in case of non-normally distributed data;
- is able to apply these techniques using common statistical packages, understands the results obtained with these techniques, and is able to apply these results in practice.

**Description of the course:** This course starts with the basic applications of biostatistics in the analysis of medical research data. Topics are: types of data, location and variability measures, samples and populations, distributions, confidence intervals, hypothesis testing, comparing two or
more means or proportions (parametric and non-parametric methods), and relationships between two variables (correlation, simple linear regression). The course also includes an extensive discussion of multiple linear regression models.

**Nr of participants:** Max. 50  
**Study load:** Four weeks of lectures, computer practicals, self study.  
**Credits:** 6 EC  
**Certificate of participation:** The participants should at least attend 80% of the course and pass the written exam, prior to obtaining a certificate.  
**Costs:** see website  
**Dates:** Once a year in October/November. Please note: There is large interest in this course. Students participating in the Epidemiology programme have priority.  
**Registration:** Online application on [website](http://www.msc-epidemiology.nl).  
**Website/more information:** [www.msc-epidemiology.nl](http://www.msc-epidemiology.nl)

### 6.4 Modern Methods in data Analysis

**Aim/Goal:** This course provides statistical methods to study the association between (multiple) determinants and the occurrence of an outcome event.

**Description of the course:** The course starts with an introduction to likelihood theory, using simple examples and a minimum of mathematics. Next, the most important regression models used in medical research are introduced. Topics are: maximum-likelihood methods, logistic regression, model validation and regression diagnostics, Poisson regression, and analysis of `event-history` data, including an extensive discussion of the Cox proportional hazards regression model. Also, the basic principles of longitudinal data analysis are taught.

**Nr of participants:** Max. 50.  
**Study load:** Three weeks of lectures, computer practicals, self study.  
**Credits:** 4.5 EC.  
**Certificate of participation:** The participants should at least attend 80% of the course and pass the written exam, prior to obtaining a certificate.  
**Costs:** see website.  
**Dates:** Once a year in January. Please note: There is large interest in this course. Students participating in the Epidemiology programme have priority.  
**Registration:** Online application on [website](http://www.msc-epidemiology.nl).  
**Website/more information:** [www.msc-epidemiology.nl](http://www.msc-epidemiology.nl).

**More courses offered by the Julius Center:**
- Clinical Trials and Drug Risk Assessment  
- Meta Analysis  
- Risk Assessment and Risk Management

For more information on these courses go to the website of the [Epidemiology programme](http://www.msc-epidemiology.nl).

### 7 Clinical Research

**7.1 Basiscursus Regelgeving en Organisatie voor Klinisch Onderzoekers integrity (BROK, in Dutch)**  
**Organized by:** Bureau Kwaliteitsborging Onderzoek UMC
Aim/Goal: Following this course (and pass the exam) will lead to a certificate necessary to perform clinical research within UMCs. This course is initially intended for employees of UMC Utrecht, however, if not fully booked other students can also apply. This course will be obligatory for anyone who is working in this field.

Description of the course: The implementation of human-related research becomes increasingly complex. There are multiple disciplines involved in human-related research. It is not only expected that you are an expert in your field, but that you also know the rules and regulations related to this type of research. Finally, the proper reporting of research, preferably in the form of an article to be published in a high impact journal, is necessary to fulfil a social obligation and to acquire funds for new research. The following aspects of human-related research are addressed: regulation, methodology, Medical Ethical Committee, medical ethics in general, project organization, pharmacy, laboratory and legal affairs.

Nr of participants: Max. 30. If capacity permits, clinical researchers not working at UMC Utrecht are allowed to participate in this course.

Study load: Four days of lectures and a written exam.

Credits: 1.5 EC.

Certificate of participation: A certificate is given to those who pass the exam.

Dates: Multiple times a year (see website).

Registration: via registration form on website.

Website/more information: Go to the website to find more information or Bureau Kwaliteitszorg Onderzoek UMC Utrecht.

Mw. Drs. M.C. Hafkamp, course coordinator kwaliteitsborging@umcutrecht.nl 088-7555212.

Please note: There is also a short (one-day) course available for more experienced researchers.

7.2 Clinical Trials and Drug Risk Assessment

Organized by: Julius Center for Health Sciences and Primary Care

Aim/Goal: At the end of this course, the participant has (insight in) / is able to:

– the basic design principles of a randomized controlled trial (RCT);
– an overview of specialized design options for a RCT;
– the basic principles of data analysis of a RCT;
– an overview of more specialized principles of data analysis of a RCT;
– the principles of drug risk assessment and how to evaluate potential side effects of medication;
– an overview of current regulatory principles for the conduct of RCTs;
– an overview of common practical issues in the conduct of a RCT and suitable solutions;
– design a valid RCT for any intervention;
– read, understand and appraise epidemiological scientific papers on RCTs.

Description of the course: A clinical trial is an exceedingly important instrument in the assessment of treatment efficacy. With regard to clinical trials, the emphasis will be on methodological principles and on the clinical practice of therapeutic experiments. Furthermore, this course addresses the principles of studying the effects of drug treatments on the risks of unwanted effects. The course programme covers the principles of therapeutic research design, including design of study, design of data collection, design of data analysis, including some modelling techniques in the analysis to clinical trials, and the interpretation of its results. Finally the programme covers the principles of drug risk assessment in the context of therapeutic research. Seminal lectures on trials and practical exercises are included in the programme.
Nr of participants: Max. 60.
Study load: Five days of lectures, practical exercises, seminars.
Credits: 1.5 EC.
Certificate of participation: The participants should at least attend 80% of the course.
Costs: see website.
Dates: Once a year.
Registration: Online application on website.
Website/more information: www.msc-epidemiology.nl.

7.3 Basic course Good Clinical Practice (in Dutch)
Organized by: Bureau Kwaliteitsborging Onderzoek UMC.

Aim/Goal: Basic principles of Good Clinical Practice.

Description of the course: The following topics are addressed: history of clinical research, quality and ethics, laws and regulations, medical ethical committee (procedures, activities, and responsibilities), examples from clinical practice.

Nr of participants: If capacity permits, clinical researchers not working at the UMC Utrecht are allowed to participate in this course.
Study load: One day of presentations and workshops.
Credits: 0.3 EC.
Certificate of participation: Can be obtained by participants who attend the whole day.
Costs: €350,- (for external/non-UMC participants) and €250,- for UMC-participants.
Dates: This course is offered multiple times a year (see website for dates).
Registration: Registration form available on the website.
Website/more information: Bureau Kwaliteitsborging Onderzoek UMC Utrecht.
Mw. Drs. M.C. Hafkamp, course coordinator kwaliteitsborging@umcutrecht.nl, phone 088-7555212.

8 Career Perspectives

8.1 Postdoc Career Development Initiative
The Postdoc career Development organizes events and training sessions for late stage PhD candidates and postdocs. Web: www.pcdi.nl.

8.2 Academic Transfer
Academic Transfer is the Dutch academic careers network that hosts job offers from Dutch universities and university medical centers. Web: www.academictransfer.com.

8.3 Utrecht University PhD Activating Career Event
The PhD Activating Career Event is a two-day event for, primarily, third-year PhD candidates of Utrecht University and UMC Utrecht. During those two days you will look at a range of possible career opportunities after completing a PhD. You will hear from professionals who have taken the step towards a career in the Academia or beyond and you will look at the skills required for those career tracks. For dates and registration visit the PhACE website.