

**PREPARATION OF AN INVENTORY OF FORMAL
(GRADUATE AND POST GRADUATE) AND “ON-THE-JOB”
RISK ASSESSMENT TRAINING SCHEMES
OF RELEVANCE TO THE WORK OF THE
NON-FOOD SCIENTIFIC COMMITTEES
ESTABLISHED BY COMMISSION DECISION 2004/210/EC**

[Tender SANCO / 2006 / C7 / 024]

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Preparation of an inventory of formal (graduate and post graduate) and “on-the-job” Risk Assessment training schemes of relevance to the work of the non-food scientific committees established by Commission decision 2004/210/EC

CONTENTS

	Page
Summary	3
Introduction	3
Methodology	5
Results	7
Conclusions and Recommendations	9
Appendices	
1. EC Committees - keywords	
2. Google search keywords	
3. Schedule for completion of project	
4. Excel spreadsheet of results	
5. Individual training course records	
6. Follow up letter and questionnaire	

SUMMARY

At the Commission's request a comprehensive inventory of training schemes capable of training scientists to serve on the non-food Risk Assessment committees was established through extensive internet searching and follow up contact to seek detailed information on course contents and scope.

Over thirty training providers were identified as potentially relevant by a progressively refined internet search process, using key words derived from the mandates and responsibilities of the Risk Assessment committees. Eight of these providers were judged to offer training that was most directly relevant to the requirements based upon responses to a follow up questionnaire survey. Others were identified to be less relevant. The results have been collated into an electronic format to facilitate access to the detailed course information collected. Hard copy results are also included with this report.

The overall conclusion of the study was that there are training opportunities available for scientists to gain both expertise and qualifications, to enhance their suitability to serve on the Risk Assessment committees. However, these opportunities are relatively few and their relevance to the Commission's interests did not appear to be clearly highlighted to enable easy access.

Therefore it would be of advantage to the Commission to take steps to promote greater awareness of the present and future demand for scientists to serve on its Risk Assessment committees and to promote this area as an attractive career path. This would, in turn, be expected to encourage the development of appropriate networking frameworks between existing providers, as well as possibly encourage those more 'marginal' institutions to adapt their courses in a way likely to increase their relevance and the throughput of trainees.

1. Introduction

The purpose and context of this study is to compile an inventory of training schemes needed to support the Directorate General for Health and Consumer Protection in order to assist their management of the three non-food scientific committees who give the Commission advice in the areas of Consumer Safety, Public Health and the Environment. These are:

- Scientific Committee on Consumer Products (SCCP)
- Scientific Committee on Health and Environmental Risks (SCHER)
- Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)

The Directorate General for Health and Consumer Protection wishes to ensure that a sufficient number of trained scientists continue to become available to serve on the scientific committees. The demand for new recruits to serve on these committees has recently been increased because of the

effect of a Commission Decision¹ limiting the time period over which any individual can remain eligible to serve on any of its scientific committees. This, in turn, requires that sources of training are available, which can be readily accessed to develop the knowledge and expertise in Risk Assessment of individual scientists so that they can be technically competent to carry out their relevant duties for the Commission.

1.1 Subject matter

The work focused mainly on the mandates of the non-food scientific committees in order to prepare a comprehensive inventory to provide robust underpinning for succession planning among the scientists who serve on the committees that provide Risk Assessment advice to the Commission. The scope of this search was extended to include related areas such as food safety, public health and pharmaceuticals where risk assessment training may be relevant and in particular to increase the chance of detecting toxicology courses.

1.2 Geography

The project addressed training schemes available within EU Member States, accession countries and European Free Trade Area (EFTA) countries.

1.3 Scope

The types of Risk Assessment training schemes covered by the study included:

- a) formal University graduate and post graduate schemes;
- b) schemes managed by national bodies, schools of public health or similar bodies;
- c) exchange schemes.

1.4 Information collected

The project gathered the following information for each scheme identified:

1.4.1 Management and administration of the scheme

Name, physical location and contact points;

Who the course is aimed at (minimum qualifications, prior experience.);

Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;

Whether an individual scheme or part of a broader network;

¹ Commission Decision of 23 April 2007 amending Decision 2004/210/EC setting up Scientific Committees in the field of consumer safety, public health and the environment (2007/263/EEC).

If part of a network, description of the other partners, countries involved and the coordination mechanism.

1.4.2 Organisation of the course

Duration (part time, full time, on-the-job training);

Language(s);

Formal entry requirements (academic level, previous experience);

Number of trainees per annum;

Cost of participation and how participants are funded (own costs, grants);

The qualification or certificate and the extent of its recognition;

Balance of theoretical and "on-the-job" training.

1.4.3 Technical nature of the course

The technical scope of the scheme (summary of the curriculum);

Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).

1.4.4 Views of the scheme manager

Factors which influence participation in the scheme;

Measures that could increase awareness of the availability of the scheme and greater participation;

Evidence of application of the training in subsequent professional life;

Awareness of the work of Community Scientific Risk Assessment bodies and the potential for cooperation.

2. Methodology

The project was carried out using a combination of desk-based research, web site visits, correspondence and telephone follow up.

a) Desk-based research.

This was used to lay down a broad basis of initial leads. It employed extensive internet-based search techniques mostly using the Google 'Advanced Search' facility. It is recognised that this approach does not address the recognised English-language bias of the World-Wide Web, however in addition an attempt was made to exploit those of the Dialog® host's commercial databases which claim relevant international coverage, namely:

- **Kompass Western Europe** a directory database providing information for over 1 million companies in 19 European countries, with an emphasis on manufacturing, industrial, and associated service sectors.
- **D&B European Financial Records™**, database of financial information for over 5 million public and private businesses in 13 European countries including brief information on companies' main areas of activity.
- **Key Note Market Research** the full text of corporate and industry reports from the "Key Note" series of market research overviews, covering both continental Europe and the U.K. and drawing together fundamental primary data with expert commentary and analysis on companies and industry or market sectors.

In fact results from the commercial databases were disappointing and a large percentage of organisations identified were done so via Google web searching. It is recognised that risk assessment training is carried out within and by private companies but these are not publicly available and so will not have been identified in this study.

The searches themselves were conducted using combinations of pertinent key words, the project title providing the basic starting point for key word selection. Additionally, the responsibilities and mandates of each relevant Community Risk Assessment committee were used to select key words (shown in Appendix 1) and members' CVs were also considered for additional topics. Appendix 2 lists the combinations of key words that were actually selected to guide the searches. Searches were progressively refined in the light of detected training opportunities.

The results of searches were evaluated to determine their relevance to the project objectives and identify those that warranted further investigation. The relevant results were collated according to their main subject matter and type, and used to inform the further stages of research (below).

b) Web site visits

The web sites of likely providers were visited and explored to ascertain basic details of what training they offered. Again, those of more relevance were retained on a short-list for further investigation, while those found to be of less relevance were assigned less priority.

c) Correspondence

The more promising providers, which had been allocated into the 'high' and 'medium' categories of likely relevance, were each sent a questionnaire (see Appendix 6) designed to gather the specific information set out in section 1.4 (above).

d) Telephone follow-up.

In order to ensure the greatest possible response to the questionnaire, 23 sources of Risk Assessment training that did not make their questionnaire return within the requested time period were sent a reminder email and then telephoned in order to encourage them to respond to the survey. Of these, 8 submitted a positive return, with information of relevance to the survey. Other brief returns were found not to be relevant and were discarded. Where no response was forthcoming, it was assumed that the training provider did not consider their course to be of relevance to this investigation. The information generated by web-site visits and questionnaire returns was judged to be of sufficient detail to meet the objectives of the study, so removing the need to make personal visits to training providers.

e) Liaison with the sponsor

Visits to the offices of Unit C7 (Risk Assessment) Health and Consumer Protection Directorate General, Brussels were made as follows:

- a) An initial meeting to clarify the methodology and the needs of the Commission's services (25th January 2007);
- b) A second meeting to present an interim report and to resolve any difficulties encountered (20th April 2007);
- c) A final meeting was held to discuss the results and to resolve any issues arising from the draft final report (10th October 2007).

3. Results

3.1 Search findings

A total of 78 potentially relevant Risk Assessment training sources were identified using key-word searches (listed in Appendix 2). The web sites of all training sources identified through the searches were visited on the internet to make an initial assessment of the likely relevance of their courses and allocate them to a category as below. This process was done by first including those of the greatest relevance to the high category, then assigning those that lacked any sign of relevance to the low category, thus leaving those of more doubtful nature within the medium category.

Relevance	Category	Number found
High	1	9
Medium	2	26
Low	3	43

We recognise that the above categorisation was necessarily subjective and called upon the judgement of the report authors. However to inform that judgement, reference was made to the range of subject matter concerning each of the three non-food risk assessment committees. The mandate of each

individual committee covers a separate range of topics (although there is some overlap) and an 'aggregate' spectrum of topics was therefore derived, in order to cater for the interests of all three committees. Training courses that directly covered a majority of the aggregate topic spectrum were thus allocated to the high relevance category (including any with specific though restricted relevance). Others that addressed little of the topic spectrum were allocated to the low relevance category. Training course providers that did not fall clearly into either of the high or low categories were therefore categorised as of medium relevance, to be reconsidered later.

This exercise was carried out conservatively, so that training providers of possible, if doubtful relevance could be retained in the study for further, more detailed scrutiny. This mechanism allowed the authors to focus resources upon all of the training providers that were judged as likely to be of interest to the Commission, while those of least potential were rejected at an early stage.

3.2 Delivery of overall findings

Questionnaires (Appendix 6) that were sent to all 35 training providers in the 'high' and 'medium' relevance categories returned a total of 17 responses, including most of those in the 'high' relevance category. Fewer relevant training providers were identified than the study proposals had anticipated. It was therefore decided that there were insufficient records to warrant compiling into database software, since that would have added little to the interrogation of the data set.

The full results of the searches and questionnaire responses are compiled in electronic form on a CD, which is supplied with this report. The CD contains:

- A MS Excel® spreadsheet which tabulates basic information about all of the training sources identified, and gives fuller data for those assigned to the high and medium relevance categories.
- A table in MS Word® format containing all of the detailed response data returned by each provider in response to the questionnaire survey.
- The spreadsheet contains 'hyperlinks' to take users automatically to the corresponding data supplied by each training provider who returned a questionnaire.
- The spreadsheet also includes full working links to web sites of training providers and, where possible, for courses themselves.

All data are additionally supplied in printed form with this report as Appendix 4 (spreadsheet data) and Appendix 5 (questionnaire returns data).

The data relating to the high and medium relevance training courses can be searched using the electronic records (on the CD) to select those offering alternative methods of training (e.g. distance learning vs. attended course) or types of qualification (e.g. M.Sc. or Ph.D.).

Some example findings include:

Countries - Courses are available in Austria, Belgium, Italy, Netherlands, Norway and the United Kingdom. Additionally, one provider moves a short course at different venues around Europe.

Qualifications – Scientists can qualify to the levels of
Postgraduate (Ph.D., M.Phil., M.Sc., M.A. Pg. Dip., M.Res.),
Undergraduate (First degree)
Other (Short courses, Continuing Professional Development)

Duration – Courses range in length (depending upon the type of qualification sought and whether full- or part-time, or ‘modules’) from 3, 2 and 1 year, 9 or 2 months, 5,4 and 1 day and “flexible” to suit the client.

Language All courses identified are taught in English.

The courses of greatest relevance to the study were predominantly post-graduate (covering Diploma, Masters and Ph.D.), ranging in duration from one or more years with the precise time required often depending on whether the course was full- or part-time attendance (which was often optionally available). Different courses were offered on both distance-learning and a residential basis. Other courses, however, were of shorter duration and were orientated toward sharing of practical expertise, rather than leading to recognised academic qualifications.

4. Conclusions and recommendations

This study found that a range of training opportunities are available within a number of European countries relating to the interests and skills needs of the Commission’s Risk Assessment committees. There is a wide variety of courses available. None was found to be dedicated exclusively to the work of the Risk Assessment committees.

Training opportunities were identified through targeted internet searching and follow up questionnaires (see Appendices 2 and 6). The most widely used and universally accepted search engine was used together with queries in English, since that is recognised as international first language in scientific exchanges. On the basis of detailed information obtained, courses were subjectively identified as more or less relevant to the risk assessment remit of the three committees. We recognise that this process depends on the judgement of the project team but where available, full course information is provided together with web-links to enable the reader to form their own view.

It is probable that most relevant long-term courses offered by established institutions, such as Universities, were identified by the search process, but none of these was found to be exclusively dedicated to the kind of training with which this study was concerned. It is also quite likely that this study failed to detect other, shorter training opportunities offered on a more ad hoc basis and / or by less well established institutions (such as expert societies) or within industry which may be more closely dedicated to the purpose of training

and experience building of risk assessors. The difficulty in detecting these arises from their lack of widespread advertisement outside of the academic or industry interest groups to whom they relate. Where risk assessment is part of a wider and more general course, or within a technically targeted course, this may not be advertised and detected by the internet search engines.

It is also known that several EU Framework 6 funded projects have training elements or modules as part of their agreed objectives. But these are not dedicated to the purpose of training future risk assessors, so were not included in this study. For example, an FP6 integrated project, Novel Methods for Integrated Risk Assessment of Cumulative Stressors in Europe (NOMIRACLE, <http://nomiracle.jrc.it/default.aspx>) has specific and relevant training and workshop modules within it. A directory of relevant integrated projects and networks of excellence (e.g. covering Global Change and Ecosystems, Life Sciences, Genomics and Biotechnology for Health, Food Quality and Safety) funded under FP6 is available on the Commission's website at <http://ec.europa.eu/research/fp6/projects.cfm>

Technical training courses may be linked to exchange opportunities which can provide more extensive practical experience. For example the European Programme for Intervention Epidemiology Training (EPIET, <http://www.epiet.org>) has been running for 10 years with EU funding and is now hosted by the Swedish Institute for Infectious Disease Control in Stockholm. A limited number of fellows are funded (10 to 16 each year currently funded by the European Commission and Member States) to spend 2 years' secondment at an institute in another Member State. They attend an initial central introductory training course and 4-5 more intensive technical training modules during their secondment before returning to their original institute. Such a model might be worth exploring further in the risk assessment field though will depend on funding availability.

Several of the more promising training providers are expected to be able to address the needs of the Commission for training of future risk assessors. These providers may well be willing to expand their capacity to meet the Commission's needs in the future. It is also possible that other providers who at present only offer courses of marginal relevance may decide to adapt their future provision in order to meet the growing need for training and demand for appropriately qualified scientists to serve on the Risk Assessment committees.

The overall conclusion of the study was that there are training opportunities available for scientists to gain both expertise and qualifications, to enhance their suitability to serve on the Risk Assessment committees. However, these opportunities are relatively few and their relevance to the Commission's interests did not appear to be clearly highlighted to enable easy access.

We recognise that this study is a snapshot in time and that the educational landscape is constantly changing. We therefore recommend that the Commission consider taking steps to raise awareness of its growing need for risk assessment expertise.

A suitable advert by the Commission aimed at academic institutions, appropriate public institutions and industry could seek response from potential suppliers. A standard questionnaire could then be sent to responders to gather detailed and targeted information as sought in the current study. This might provide a wider spectrum of available training opportunities but it is recognised that this would be a large administrative task. This activity could be timed to coincide with the Commission's future mandate renewal exercise for its Scientific Committees.

This is likely to promote the demand for training opportunities and to steer these toward a syllabus more dedicated to the specific needs of the Commission. By highlighting the need for such specialised scientists (e.g. via web based resources) and raising the awareness of future career opportunities, it is possible that interest among the science profession and training providers will increase. This, in turn, would be expected to improve the number and relevance of courses available. In the longer term, an expansion of networking activity and awareness among the professional scientific community concerned with risk assessment could provide the necessary impetus to increase training capacity required to sustain demand for such specialists to serve on the Commission's future non-food Scientific Committees.

CSL

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Appendix 1

The web sites listed below were used as a source of key-words to guide the search for training providers. The starting point was the Europa website (1), from which links were followed to the three respective non-food risk assessment committees (2). At each of these their mandate and members' CV's were accessed to provide possible key words, which were subsequently refined into a short list (shown in Appendix 2) on the basis of whether searches were found to produce leads to training courses.

1. EUROPA WEBSITE

http://ec.europa.eu/health/ph_risk/committees/committees_en.htm

2. EC website for relevant non-food risk assessment committees.

2.1 Scientific Committee on Consumer Products

http://ec.europa.eu/health/ph_risk/committees/04_sccp/04_sccp_en.htm

Safety, allergenic properties, cosmetic products (ingredients), consumer health, toys, textiles, clothing, personal care products, domestic products, detergents, consumer services, tattooing.

from members cvs Pharmacology, therapeutics, health science, occupational health, environmental health, dermatology, Dublin, Wurzburg, Dortmund,

2.2 Scientific Committee on Health and Environmental Risks

http://ec.europa.eu/health/ph_risk/committees/04_scher/04_scher_en.htm

Toxicity, ecotoxicity, chemicals, biochemicals, biological compounds, human health, environment, dangerous substances, biocides, waste, environmental contaminants, plastic, water pipe work, new organics substances, drinking water, air quality, human exposure to mixtures of chemicals, sensitisation, endocrine disrupters.

from members cvs Environmental medicine, contaminants, ecological risk assessment, Tubingen

2.3 Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihr/04_scenihr_en.htm

Consumer safety, Public health, Synergic effects, cumulative effects, antimicrobial resistance, nanotechnology, medical devices, blood products, fertility reduction, endocrine cancer, noise, electromagnetic fields, mobile phones, transmitters.

from members cvs Toxicology, environmental health, water contaminants, air contaminants, soil contaminants, health and safety executive

Other keywords

Environmental science, courses, training, degree, postgraduate, diploma, MSc, EU, European, distance learning

Key words used for Google searching

Key words used in combinations shown below were found to lead to websites of training providers, some of which offered courses of apparent relevance to this study. Other key words (see Appendix 1) originally judged to be highly pertinent were found not to lead to training course providers, so were not used further.

European degree courses toxicology

distance learning courses toxicology

risk assessment toxicology courses

toxicology degree courses Europe

environmental science

environmental health degree

toxicological pathology

Kuopio Toxicology

Dortmund Toxicology

Pharmacology training

Pharmacology degree

France pharmacology degree

Sweden toxicology degree

Norway toxicology degree

Belgium toxicology degree

Netherlands toxicology degree

Italy toxicology degree

Environmental science Europe

Pharmacology Europe

Toxicology Europe

Environmental sanitation Ghent University

Pharmacology and toxicology at Freie university Berlin

Appendix 4 – please see the excel table attached

Appendix 5 – tabulated responses to questionnaire

Contents – by course provider

Course Provider	Course and link to entry	Page
Surrey University	Applied toxicology	3
Birmingham University	Applied toxicology	7
Pesticides Safety Directorate	Consumer risk assessment	11
Ulster University	Environmental toxicology and pollution	14
Wageningen	Risk assessment	18
Lancaster University	Science of the environment	24
Milan University	Risk assessment and risk analysis	27
NIVA	Occupational health and safety	33
IUTOX / Malmfors	Risk assessment	36
King's College	Public health and health protection	39
King's College	Environmental health	43
King's College	Risk analysis	46
Utrecht University	Toxicology and environmental health	49
Telemark University	Inland Water Quality Assessment	52
Vienna Medical University	Toxicology	56
Vose Consulting	Animal agriculture and food safety risk analysis	59
Delft University	Nanotechnology and (its) ethical implications	64

MSc. / Postgraduate Diploma in Applied Toxicology	University of Surrey	
1. Management and administration of the scheme	a) Name, physical location and contact points;	MSc. / Postgraduate Diploma in Applied Toxicology School of Biomedical and Physical Sciences, University of Surrey, Guildford, UK Mrs Linda Burton: E: L.Burton@surrey.ac.uk T: +44 (0)1483 689212 F: +44 (0)1483 686401
	b) Who the course is aimed at (minimum qualifications, prior experience.);	minimum of a science degree in a relevant subject plus at least one year's experience in a related area (e.g. employees in government departments, contract laboratories and pharmaceutical, chemical and consumer product industries)
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	Formal University post-graduate scheme
	d) Whether an individual scheme or part of a broader network;	individual scheme
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	No data
2. Organisation of the	a) Duration (part time,	3 to 6 years Part time programme equating to 12 months full-time study

course	full time, on-the-job training);	
	b) Language(s);	English
	c) Formal entry requirements (academic level, previous experience);	minimum of a science degree in a relevant subject plus at least one year's experience in a related area
	d) Number of trainees per annum;	30
	e) Cost of participation and how participants are funded (own costs, grants);	No data given
	f) The qualification or certificate and the extent of its recognition;	MSc./Postgraduate diploma
	g) Balance of theoretical and "on-the-job" training.	No data given
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	Core Modules: Carcinogenicity and Mutagenicity Reproductive Toxicology Toxicokinetics and Metabolism Principles of Toxicological Pathology Principles of Experimental Toxicology and Risk Assessment Target Organ Toxicology - Systems I: Liver, Kidney, Gastrointestinal Tract and Skin Target Organ Toxicology - Systems II: CNS, PNS, Endocrine and Musculo-skeletal Systems

		<p>Target Organ Toxicology - Systems III: Cardiorespiratory and Haematopoietic Systems</p> <p>Supplementary Modules can include:</p> <p>Alternative Methodologies to the Use of Animals in Toxicology</p> <p>Bioinformatics and .-omics .</p> <p>Biomarkers</p> <p>Biopharmaceuticals</p> <p>Dermal Toxicology</p> <p>Design of in vivo Studies</p> <p>Ecotoxicology</p> <p>Endocrine System</p> <p>Food Chemical Safety Evaluation</p> <p>Haematology and Clinical Biochemistry</p> <p>Immunotoxicology</p> <p>Inhalation Toxicology</p> <p>Lesions, Repair and Mutations</p> <p>Measuring and Interpreting Responses - Numerical and Human Health Data</p> <p>Metabolism and Human Variation</p> <p>Occupational Toxicology</p> <p>Paediatric Toxicology</p> <p>Plant Protection Products and Plant Biotechnology</p> <p>Safety Assessment of Pharmaceutical Agents</p> <p>Safety Pharmacology in Preclinical R&D</p> <p>Study Design, Quality and Interpretation</p> <p>Techniques in Safety Assessment</p>
	<p>b) Where trainees would expect to apply their training (national bodies, industry, scientific</p>	<p>Industry, contract and Government Agencies throughout the world.</p>

	advisory bodies).	
4. Views of the scheme manager	a) Factors which influence participation in the scheme;	No data
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	No data
	c) Evidence of application of the training in subsequent professional life;	No data
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	No data
MSc. / Postgraduate Diploma in Applied Toxicology	University of Birmingham	
1. Management and administration of the scheme	a) Name, physical location and contact points;	Course Director: Prof J. K. Chipman; Course Co-ordinator: Dr A. E. Pheasant Course Administrator: Ms S. Bain School of Biosciences, University of Birmingham Contact s.a.bain@bham.ac.uk or Bio-PGTadmissions [Bio-PGTadmissions@adf.bham.ac.uk]
	b) Who the course is aimed at (minimum qualifications, prior	Science graduates with a minimum 2ii degree in a relevant subject and/or individuals with other qualifications plus experience in toxicology related areas

	experience.); c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	University of Birmingham programme leading to MSc degree (180credits), PG Diploma (120 credits) or PGCertificate (60 credits)
	d) Whether an individual scheme or part of a broader network;	Individual schemes covering the qualifications listed above, all based at University of Birmingham
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	Minimum durations are:- MSc degree; 1 year full time; 2 years part time PG Diploma; 9 months full time; 18 months part time PG Certificate; equivalent of 4 months full time It is also possible to attend modules (5-6 weeks) on a 'one off' basis although a University qualification cannot be obtained unless at least 60 credits (approx 3 modules) are completed successfully.
	b) Language(s);	English
	c) Formal entry requirements (academic level, previous experience);	Good Honours degree (minimum 2ii) in relevant subject (eg Chemistry, Biology, Pharmacology, Biochemistry, Environmental Science, Medicine) Applicants with other qualifications and relevant experience may be considered

	d) Number of trainees per annum;	Approximately 30 (25 home/EU + 5 overseas)
	e) Cost of participation and how participants are funded (own costs, grants);	Fees £4,100 (2007/08) + living costs 9 Research council funded studentships + 6 partial fees bursaries are available. Other students self fund.
	f) The qualification or certificate and the extent of its recognition;	MSc degree, PGDiploma or PGCertificate. The University formal qualifications are recognised internationally. Modules can be submitted for CPD recognition by Institute of Biology and Royal Society of Pathologists.
	g) Balance of theoretical and "on-the-job" training.	For full time MSc degree, 9 months theoretical training (120 credits) followed by 3 months work place based project (60 credits)
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	see http://www.biosciences.bham.ac.uk/prospective/postgraduate/toxicology.htm for details Taught module titles are 1. Metabolism and excretion of xenobiotics 2. Pharmacological and clinical aspects of toxicology 3. Molecular and cellular mechanisms of toxicity and carcinogenesis 4. Toxicology in practice: safety assessment in industry and the environment These are followed by the research project carried out in area of the student's choosing. In addition generic transferable skills training is embedded throughout the programme. Module 4 is particularly relevant to risk assessment.
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Pharmaceutical and contract research industry, NHS, Government agencies eg FSA, HSE, HPA, Department of Health, Research organisations.
4. Views of the scheme manager	a) Factors which influence participation in	New graduates are attracted by the design of the programme which allows them to apply their fundamental science degree to a vocational subject thus providing an

	the scheme;	integration of related disciplines and converting them into employable toxicologists. Those already in employment want to expand/update their skills in this area and gain a university qualification or to attend an individual module as part of CPD. The availability of funding is obviously a major limiting factor in that many potential applicants cannot afford to self fund and do not want to incur further debt. Secondment from Industry is possible but often difficult for the employer.
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	More advertisement within Industry and Government organizations of the CPD value and opportunity
	c) Evidence of application of the training in subsequent professional life;	The majority of MSc Toxicology graduates gain employment within the 'toxicology' sector. Destination data collected by the School over the last 4 years show an average of 20% (15 - 30%) MSc graduates progressing to PhDs (and then often into industry), 21% (15 -27%) moving directly into employment in industry and 37% (27 – 46%) in other UK employment. Recent industrial employers include GSK, Unilever (SEAC), Covance, Sequani, HLS, Severn Trent, Rentokil, WasteClear and dstl Porton Down. Other UK employers include Poisons Units, Regional Toxicology labs, other NHS posts, research posts in Universities & research institutes, Forensic Science labs and regulatory authorities .
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	Course tutors are already involved extensively in Government advisory and Industrial advisory committees and bring this experience to the training programmes. A number of the graduates move into risk-related employment. There is more potential for employees within this community to avail themselves of the relevant modules as CPD.
Consumer Risk Assessment Training	Pesticides Safety Directorate	
1. Management and administration of the	a) Name, physical location and contact	Consumer Risk Assessment Training Day. Held at Pesticides Safety Directorate, York. Contact Christel Hetherton.

scheme	points;	
	b) Who the course is aimed at (minimum qualifications, prior experience.);	No minimum qualifications. Aimed at technical and regulatory staff involved in the production and submission of data to PSD.
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	Organised by Pesticides Safety Directorate, an Executive Agency of Defra
	d) Whether an individual scheme or part of a broader network;	One of a series of workshops and conferences organized by PSD on Plant Protection Product legislation and procedures.
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	NA
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	One day event.
	b) Language(s);	English.
	c) Formal entry requirements (academic level, previous experience);	No formal entry requirements.

	d) Number of trainees per annum;	Take a maximum of 12 delegates per event. Hold around 2-3 CRA events per year.
	e) Cost of participation and how participants are funded (own costs, grants);	Cost is currently £350 per delegate. Funded by trainees own organizations (e.g. Industry organizations, other Government Departments etc).
	f) The qualification or certificate and the extent of its recognition;	No qualification or certificate issued.
	g) Balance of theoretical and "on-the-job" training.	See typical programme: http://www.pesticides.gov.uk/corporate.asp?id=1989
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	The aim of the day is to raise awareness, provide guidance in the appropriate use of residue values in risk assessment models and highlight commonly encountered problems (<i>see attached programme</i>).
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	The training is mainly attended by Industry representatives who would then apply the knowledge they have learnt to the pesticide work. Some delegates have also come from other Government Bodies (e.g. Food Standards Agency, and have used the training to gain a better understanding of the work undertaken by PSD).
4. Views of the scheme manager	a) Factors which influence participation in the scheme;	Desire for attendee to gain a better understanding of how to perform a consumer risk assessment and understand the regulatory process.

	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Events are advertised on PSD's website and interested parties are e-mailed when PSD advertises a new event.
	c) Evidence of application of the training in subsequent professional life;	No easy way to assess this. It is hoped that by participating in the training, delegates have a better understanding of the regulatory process and are able to apply the knowledge they have learnt to their day to day work, thus ensuring that the quality of their pesticide applications fully addresses all legal and procedural requirements.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	PSD works closely with the EC, EFSA and other MSs and is fully aware of and involved in the latest scientific developments.
MSc Environmental Toxicology & Pollution Monitoring	University of Ulster	
1. Management and administration of the scheme	a) Name, physical location and contact points;	Course Director: Dr Richard Douglas School of Environmental Sciences University of Ulster Coleraine, BT52 1SA Northern Ireland, UK Tel: +44 (0) 28 7032 3116 Fax: +44 (0) 28 7032 4911

	b) Who the course is aimed at (minimum qualifications, prior experience.);	www.ulster.ac.uk/es The course fulfils the demand for trained personnel in the environmental regulatory agencies, in companies subject to such regulation and those involved in providing support services such as monitoring and consultancy. The course is offered in part-time online mode and suits people already working in the environmental field or those wishing to pursue a career in this area. Applicants should normally possess a degree in science of second class honours or above, though relevant prior experience will also be taken into account.
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	This is a Master or Science offered by the University of Ulster, accredited by HEFCE and the Institute of Environmental Management.
	d) Whether an individual scheme or part of a broader network;	Individual Masters qualification offered by the University of Ulster.
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	30 months by part-time distance learning.
	b) Language(s);	English
	c) Formal entry requirements (academic	Applicants should normally possess a degree in science of second class honors or above, though relevant prior experience will also be taken into account.

	level, previous experience);	
	d) Number of trainees per annum;	Approximately 100.
	e) Cost of participation and how participants are funded (own costs, grants);	For European Union citizens the course costs approx £3240 (i.e. 180 credit points x £18 per credit). For Non European Union citizens the course costs approx £7560 (i.e. 180 credit points x £42 per credit).
	f) The qualification or certificate and the extent of its recognition;	Master of Science is basically the highest science qualification offered by a UK University, apart from a PhD.
	g) Balance of theoretical and "on-the-job" training.	The course aims to offer the correct balance (as set by HEFCE benchmarking standards for a MSc qualification) between theoretical and practical knowledge. The ultimate use of the course to the students is always a factor when designing the modules, great effort is made to ensure that knowledge gained is applicable in the students working life.
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	Specific objectives of the course are to develop an understanding of: The general mechanisms of toxicity in humans. The basis of setting environmental quality standards. The behaviour of contaminants in water, air and soil. The main toxicological problems of contaminants in the environment. The legislative controls on contaminants.
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Trainees could use this course in government environmental agencies, environmental consultancies and other public/private bodies.
4. Views of the scheme manager	a) Factors which influence participation in	Suitability of course material. Flexibility of study hours.

	the scheme;	
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Increased advertisement, incentives from employers for employees to complete the course (i.e. pay for course fees, accelerated promotion).
	c) Evidence of application of the training in subsequent professional life;	Many students have contacted me after the course has finished, thanking me for the experience and how the course has helped their career develop. The “word of mouth” praise from the course is evident from past students recommending the course to other employees in their company, who in turn come and complete the course.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	The course material is all based on the scientific literature – this means that it is continually reviewed and at the cutting edge of knowledge in the area.
Risk Assessment	Wageningen	
1. Management and administration of the scheme	a) Name, physical location and contact points;	PET course on Risk Assessment; yearly given in October in Wageningen, The Netherlands
	b) Who the course is aimed at (minimum qualifications, prior experience.);	Target groups The PET programme distinguishes three target groups: a) Those wishing to use the programme as a vocational postgraduate training in toxicology. In general, these participants will take all courses and do both apprenticeships. b) Those enrolled in a PhD programme in toxicology. In general, these participants will choose those modules that will increase their theoretical knowledge in areas of toxicology not directly related to their field of research.

		c) Those working in industry or government in fields related to toxicology. In general, these participants will select one or more modules in order to increase their background knowledge.
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	See above: we are a formal postgraduate scheme.
	d) Whether an individual scheme or part of a broader network;	Not exactly clear what you mean by this question, individuals can follow this scheme too, do not have to be PhD students.
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	Network is the 6 participating universities: Wageningen University, Utrecht University, Maastricht University, Radboud University Nijmegen, Leiden University, and Free University of Amsterdam. In one course (on occupational toxicology, there is participation of Dortmund University and IFADO, Dortmund, Germany. In the course on Risk Assessment we have participation of teachers from different universities as well as from people working in industry of at institutes such as TNO and RIVM (which is the National Institute of Public Health and the Environment in the Netherlands).
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	Most courses last one week; the course on Risk Assessment is a two-week course, of which one week is a self-study unit available on a CD-ROM (teacher's voice, running synchronically with power-point presentation), and the second week is actual presence at the course and mainly organized as tutorials for case studies with teachers working in the field as risk assessor in different areas (e.g. pesticides, house-hold chemicals, pharmaceuticals, environmental contaminants, food, etc.).
	b) Language(s);	English

	c) Formal entry requirements (academic level, previous experience);	Background knowledge on biomedical sciences is required, we ask for a CV of candidates before we enter registrants.
	d) Number of trainees per annum;	For all courses: so 180. For the course on Risk Assessment: 10-25 (max) per annum.
	e) Cost of participation and how participants are funded (own costs, grants);	<p>This info comes from our website:</p> <p>Costs</p> <p>The fee for the theoretical courses given under the responsibility of the PET management for most of the courses is Euro 2,000.- per 2-week modules and Euro 1,000.- for 1-week modules.</p> <p>Those enrolled in a university PhD programme may apply for a reduced fee of Euro 500.- per two-week module and Euro 250.- for 1-week modules (except Laboratory Animal Science)</p> <p>Participation in the complete PET programme costs Euro 15,000.</p> <p>In individual cases, a discount may be given, depending on the source of financing.</p> <p>The fee charged for the module "Laboratory Animal Science": Course B will cost € 1000.-, PhD students may apply for a reduced fee of €450.</p> <p>The syllabi, summaries or overhead sheets relating to the various courses are included in the fee. The Open University's textbook for the introductory course will be sold at cost price (approx. Euro 150.-). For some courses a handbook will be used during the course, see the information for separate courses.</p> <p>Board and lodging and travelling expenses are not included in the fee.</p> <p>Thus: for the Risk Assessment course (a two-week course) will cost Euro 2,000.= for participants other than PhD students, these pay Euro 500.=</p>
	f) The qualification or certificate and the extent of its recognition;	Extent of recognition: it is part of the registration requirements for being a registered toxicologist. For four years (1999-2003) this course was run with a EU grant and specifically catered for European (PhD) students.
	g) Balance of theoretical	See 2a.

<p>3. Technical nature of the course</p>	<p>and "on-the-job" training.</p> <p>a) The technical scope of the scheme (summary of the curriculum);</p>	<p>Course: Risk Assessment</p> <p>Aim of the course: Toxicological risk assessment is the process of estimating the qualitative and quantitative health risks posed to man and the environment by the use of chemicals. The aim of this course is to familiarise participants with the general procedures followed during a toxicological risk assessment. Emphasis will be laid on the identification of hazards and risk posed to humans and the environment. Furthermore, attention will be paid to problems typical of various categories of chemical substances. The working format of the course is a mixture of self-study aided by lectures presented on CD-ROM, classroom lectures and tutorials and computer-aided practicals.</p> <p>Content of the course and format: The course consists of lectures and tutorials during which the consecutive steps of a risk assessment will be dealt with.</p> <p>A number of the lectures are <u>available on CD-ROM</u> and are meant for self-study.</p> <p>Subjects included are the various toxicity tests, their endpoints and hierarchy, critical effects and uncertainty factors, and the calculation of health-based guidance values. Furthermore, specific problems created by carcinogens and other types of chemicals will be treated.</p> <p>During the <u>classroom meetings</u>, a number of specific groups of chemicals and practical situations will be dealt with, such as medicines, industrial chemicals, household chemicals, crop protection agents and food additives. Here too, health effects for humans as well as for the environment will be treated. Participants will handle and present a specific case study.</p> <p>Further study material: "Risk Assessment of Chemicals: An Introduction" by C.J. van Leeuwen and J.L.M. Hermens (eds), Kluwer Academic Publishers, Dordrecht, ISBN:0-7923-3740-9.</p> <p>Although the lectures do not exactly follow the chapters of this book, it is recommended to purchase it as a general support for the course. The book is available for a reduced price from the organisers.</p> <p>Examination: There will be no examination. Instead, participants will be required to</p>
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		<p>actively take part in the discussions during the course. They will also be judged on the handling and presentation of a case study.</p> <p>List of subjects: <u>A: on the CD-ROM:</u></p> <p>Introduction</p> <p>Exposure routes to man</p> <p>Exposure routes in the environment</p> <p>Toxicity tests for human effects and their endpoints</p> <p>In vitro testing for human health</p> <p>Toxicity testing for environmental effects and their endpoints</p> <p>Estimation methods: the use of QSARs in environmental risk assessment</p> <p>Risk assessment of chemical in relation to human health</p> <p>Risk assessment of genotoxic carcinogens in relation to human health</p> <p>Risk assessment of non-genotoxic carcinogens</p> <p>Toxicological risk assessment for the environment</p> <p><u>B: classroom meetings</u></p> <p>Tutorial on the general aspects of risk assessment</p> <p>Practical: Risk assessment in the environment</p> <p>Practical: Specific aspects of crop protection agents</p> <p>Practical: Specific aspects of industrial chemicals</p> <p>Practical: Specific aspects of food, food components and food additives</p> <p>Practical: Specific aspects of drugs</p> <p>Practical: Specific aspects of cosmetics</p> <p>Practical: Specific aspects of household chemicals</p> <p>Computer practicals: EUSIS and CONSEXPO</p> <p>Case studies on specific chemicals</p> <p>Duration: One week self-study (at home/work), one week presence in classroom meetings (3 ECTS)</p> <p>ECTS credits: 3</p>
	<p>b) Where trainees would expect to apply their</p>	<p>At all positions where toxicologists are involved in risk assessment.</p>

	training (national bodies, industry, scientific advisory bodies).	
4. Views of the scheme manager	a) Factors which influence participation in the scheme;	We originally cater for Dutch PhD students, but we now see a growing participation of people working in institutes, industries or abroad.
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	We are visible now at our own website: www.toxcourses.nl and at websites of the Dutch Society of Toxicology (NVT) and of EUROTOX. We are approaching the maximum capacity of many courses. For Risk Assessment we had full courses in the years that the course was funded by the EU, now we have between 10 and 25 candidates per annum.
	c) Evidence of application of the training in subsequent professional life;	Our internal evaluations show a considerable degree of satisfaction, also from those candidates that are already working in industry or at institutes. Most Dutch PhD students find positions in toxicology after their graduation, many of whom at government institutes. We therefore assume that the courses are useful.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	Many of the teachers in our courses (thus also including the one on Risk Assessment) are involved in the work on the Community level. Part of the training in the course (see above) is on the use of the EUSIS and CONSEXPO computer systems, and these are specifically aimed at assisting in the European Community risk assessment work.
MRes Science of the Environment	University of Lancaster	
1. Management and administration of the scheme	a) Name, physical location and contact points;	Director of Studies: Prof Nick Hewitt. Administrator: Doreen Silman. Lancaster Environment Centre, University of Lancaster
	b) Who the course is	The course is aimed at people who wish to work in the environmental sector, in

	aimed at (minimum qualifications, prior experience.);	research, consultancy or management, who require a set of skills ranging from process understanding to problem solving and decision making. The course provides taught modules that students can choose, to develop subject areas of interest; and also provides transferable skill including data analysis. Minimum qualification is 2i degree. Exceptionally (for this programme) applicants with lower qualifications and significant relevant work experience in an environmental related industry will be considered (eg researcher or manager with report writing experience). Overseas candidates may require 6.5 IELTS score (or equivalent).
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	This programme is one of a number of PG programmes within the Lancaster Environment Centre at Lancaster University. It is accredited at Masters level by the university.
	d) Whether an individual scheme or part of a broader network;	It is an individual scheme, but students also benefit from being with students on other related masters programmes.
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	N/A
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	Usually full-time at the university. Some students may undertake their substantial research project (half the programme) within a related industry.
	b) Language(s);	English
	c) Formal entry	Minimum qualification is 2:1 degree. Exceptionally, applicants with lower

	requirements (academic level, previous experience);	qualifications and significant relevant work experience in an environmental related industry will be considered (eg researcher or manager with report writing experience). Overseas candidates may require 6.5 IELTS score (or equivalent). Study is at Masters level.
	d) Number of trainees per annum;	10-12 on this programme
	e) Cost of participation and how participants are funded (own costs, grants);	Standard university fees. For 2007-08 £3360 UK/EU; £10,600 for OS students. Around 5 places are fully funded by the Natural Environment Research Council (NERC) – fees and student stipend.
	f) The qualification or certificate and the extent of its recognition;	MRes Science of the Environment. Very well recognized among other universities for PhD applicants; and also within industries and consultancies in the sector.
	g) Balance of theoretical and "on-the-job" training.	50% of the programme is a research project providing practical experience of research either in labs or industry based. The 50% taught modules are research-led teaching using case studies, theoretical teaching and relevant field work.
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	180 credits total Compulsory module: Data analysis and Interpretation Research project / dissertation (90 credits) Choice of 5 modules from a list of around 40 modules, including: Environmental Radioactively; Groundwater Hydrology; Chemical Risk Assessment; Pollution Microbiology; Modelling Environmental Processes.
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Most of our graduates find employment in environmental consultancies, government agencies (particularly the environment agency), local and national government and within the NGO sector. A large proportion also go on to undertake further study (PhDs).
4. Views of the scheme manager	a) Factors which influence participation in	Students wanting substantial research experience and training; either to continue in research or have a strong foundation for sector work including consultancy for UK

	the scheme;	Gov organisations
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Promotion to different audiences
	c) Evidence of application of the training in subsequent professional life;	Data collected from 2003-04 graduates showed that 76% were in environmentally related employment of study. Many of these positions will be directly related to the training they receive.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	Currently we have no formal links with these bodies, but there should be potential for cooperation.
European Master in Risk Assessment and Risk Analysis	University of Milan	
1. Management and administration of the scheme	a) Name, physical location and contact points;	European Master in Risk Assessment and Risk Analysis Department of Occupational and Environmental Health, University of Milan by Hospital L.Sacco Via G.B. Grassi 74 20157 Milan ITALY Phone: +39 02 3568 6604 Fax: +39 02 3568 6605 Email: european.master@unimi.it Web: http://users.unimi.it/euma2312/ Course Coordinator

		<p>Professor Paolo Carrer Administrative Secretariat Sabrina Braiati Franco Mariani Voula Tasiopoulou Patrizia Urso (Webmaster) Scientific Secretariat Domenica Auteri Anna Clara Fanetti Francesca Metruccio Patrizia Vida</p>
	b) Who the course is aimed at (minimum qualifications, prior experience.);	The Master is addressed to post-graduates (second level degree) and professionals wishing to specialise and take up a career in Risk Assessment and Risk Analysis. English fluency is required.
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	<p>The Master Course is included in the Third Cycle of education as a “Second Level University Master Course” (as stated in Bologna process).</p> <p>The second edition of the European Master in Risk Assessment and Risk Analysis is organized by the Department of Occupational and Environmental Health of the University of Milan. The Steering Board includes also professors from the following:</p> <p>International Centre for Pesticides and Health Risk Prevention (ICPS). University of Milan-Bicocca - Department of Environmental Sciences, University of Insubria - Department of Chemical and Environmental Sciences.</p>
	d) Whether an individual scheme or part of a broader network;	During the first edition of the Course the Master Diploma was issued by University of Milan, University of Utrecht with the participation of University of Surrey. Regarding the present edition the Diploma will be issued by the University of Milan only, even if there are collaborations with several national, European and international institutions.

	<p>e) If part of a network, description of the other partners, countries involved and the coordination mechanism.</p>	<p>During the first edition of the Course was organised by a consortium composed by University of Milan, University of Utrecht with the participation of University of Surrey; the master Diploma was issued by the three universities. In the second edition experts from National and International Universities and Institutions have been involved into the planning of didactic programme and lecture delivery: University of Milan Bicocca University of Padua University of Insubria International Centre for Pesticides and Health Risk Prevention EC - Joint Research Centre, Ispra WHO – European Centre for Environment and Health, Rome WHO – IPCS, Geneva European Food Safety Authority, Parma National Public Health Institute of Finland University Hospital “L. Sacco”, Milan Istituto Mario Negri, Milan University Hospital “San Paolo”, Milan Politecnico of Milan National Institute for Cancer Research, Genova</p>
<p>2. Organisation of the course</p>	<p>a) Duration (part time, full time, on-the-job training);</p>	<p>Duration: 10 months full time Mode of delivery: 520 hours of theoretical lectures, exercises, work groups, seminars, guided visits to laboratories and institutions operating in the field of risk assessment and risk analysis; 160 hours of personal learning for the preparation of intermediate exams; 700 hours of practical training at European public institutions and universities, international organizations, or private companies; Lectures and other didactic activities will take place mainly in Milan at University Campus (“LITA”) of the Hospital “Luigi Sacco”. Field visits are organized at</p>

		International scientific Institutions (EFSA, JRC), agencies or companies leader in the sector of agro-chemical products.
	b) Language(s);	All courses are in English.
	c) Formal entry requirements (academic level, previous experience);	Admitted bachelor degrees (at least 4 year-second level education cycle): Medicine and Surgery; Veterinary Medicine; Pharmacy and Pharmacological Sciences; Pharmaceutical Technologies and Sciences; Biotechnologies; Biology; Civil, Biomedical, Chemical, Mechanical, Nuclear and Environmental Engineering; Geology; Chemistry; Physics; Natural Sciences; Environmental Sciences; Agro-alimentary Technologies and Sciences; Animal Production Technologies and Sciences; Statistics. English fluency is required.
	d) Number of trainees per annum;	10-20 per annum
	e) Cost of participation and how participants are funded (own costs, grants);	Tuition fee amounts to 5,000 € Ten scholarships of 3,000 are available.
	f) The qualification or certificate and the extent of its recognition;	Second Level University Master Course Degree (third educational cycle as stated in Bologna process).
	g) Balance of theoretical and "on-the-job" training.	The theoretical part of the Course has been concluded after the first 5 months with an intermediate exam. Students had to discuss a work project of risk assessment assigned on a particular topic and were examined on the modules contents knowledge by professors members of the Steering Board. Practical training has started just after the intermediate exam and will last about 5 months. During the training period students have to prepare a thesis work to be discussed at the final examination.
3. Technical nature of the	a) The technical scope of	The Master aims at developing a new common European curriculum for post-

<p>course</p>	<p>the scheme (summary of the curriculum);</p>	<p>graduate education and training in Risk Assessment and Risk Analysis. It provides a special qualification in human and environmental risk assessment, risk analysis and risk management of chemical, biological and physical hazards in accordance with the European legislation on the subject.</p> <p>The Didactic Programme of the Course is structured into the following modules:</p> <p>Basic Sciences Toxicology Ecotoxicology Biostatistics and Epidemiology Human Risk Assessment of Chemicals Environmental Risk Assessment of Chemicals Biological Risk Assessment Physical Risk Assessment Risk Management and Communication</p> <p>Special focus is on applications of Risk Assessment and Risk Analysis to:</p> <p>Occupational exposure Indoor and outdoor air pollutants Pesticides and biocides Food additives and contaminants Emergent biological and physical hazards Genetically modified organism</p>
	<p>b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).</p>	<p>University of Milan International Centre for Pesticides and Health Risk Prevention National Institute for Cancer Research, Genova University of Milan Bicocca University of Insubria International Centre for Pesticides and Health Risk Prevention EC - Joint Research Centre, Ispra WHO – European Centre for Environment and Health, Rome WHO – IPCS, Geneva</p>

		<p>National Public Health Institute of Finland University Hospital “L. Sacco”, Milan Istituto Mario Negri, Milan University Hospital “San Paolo”, Milan Dow Agro Sciences, Bologna FORECO, Milan EURAS, Ghent Technical Research Centre of Finland (VTT), Espoo National Institute for Public Health and the Environment (RIVM), Bilthoven Danish Institute for Food and Veterinary Research (DFVT)</p>
4. Views of the scheme manager	a) Factors which influence participation in the scheme;	Interest in developing a common educational programme, at European level, in the field of Risk Assessment and Management.
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Promoting such a scheme among scientific congresses, seminars and workshops; networking with academic institutions, research centres , governmental bodies, industries, international organizations.
	c) Evidence of application of the training in subsequent professional life;	Almost all of the students graduated in the past edition are at present working in the fields of Risk Assessment and/or Public Health mostly among public institutions where they have been performing their practical training.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	The Master Course is recognized by the EU and has been funded by Erasmus programme. The Course is also recognized by EU EFSA and JRC-Ispra, which gave a precious contribute to the didactic activities.

Postgraduate courses in occupational health and safety	NIVA - Finland	
1. Management and administration of the scheme	a) Name, physical location and contact points;	All courses are organised by the Nordic Institute for Advanced Training in Occupational Health (NIVA), Topeliuksenkatu 41 a A, FI-00250 Helsinki, Finland www.niva.org . However, course locations are in different Nordic countries. Also some courses have been held in other European locations, the Baltic countries or Russia.
	b) Who the course is aimed at (minimum qualifications, prior experience.);	advanced post graduate level
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	no
	d) Whether an individual scheme or part of a broader network;	We work under the Nordic Council of Ministers (NIVA is a part of it) http://www.norden.org/web/NMR/sk/index.asp?lang=6
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	See above, all Nordic countries contribute to our programme as they are stakeholders.
2. Organisation of the	a) Duration (part time,	2-5 days

course	full time, on-the-job training);	
	b) Language(s);	English
	c) Formal entry requirements (academic level, previous experience);	Preferably post graduate
	d) Number of trainees per annum;	~300
	e) Cost of participation and how participants are funded (own costs, grants);	300-1000 euros, own funding, employer funding
	f) The qualification or certificate and the extent of its recognition;	we give certificates for all our courses. These are well recognised within the OSH field.
	g) Balance of theoretical and "on-the-job" training.	Varies
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	Varies according to course
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Varies, normally in their jobs as these are advanced level courses.
4. Views of the scheme	a) Factors which	Language skills, occupation, financing, geographic location.

manager	influence participation in the scheme;	
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Links to EC and other websites and publications.
	c) Evidence of application of the training in subsequent professional life;	Many NIVA course participants keep on coming back to our courses and participants frequently give feedback of the usefulness of our courses.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	NIVA cooperates closely with the Finnish Institute of Occupational Health (FIOH), The National Research Centre for the Working Environment (DK), the National Institute of Occupational Health (N), the National Institute for Working Environment (Iceland), and Karolinska Institutet (Sweden). The NIVA board members come from these institutes.
Risk Assessment Summer School	IUTOX / Malmfors Consulting	
1. Management and administration of the scheme	a) Name, physical location and contact points;	RASS, Risk Assessment Summer School, no established physical location but at various venues mainly somewhere in Europe. Course organiser: IUTOX c/o Malmfors Consulting AB Karlskronavägen 22,S-121 52 Johanneshov, SWEDEN tel +46-8-3119910,fax +46-8-301133 Email: malmfors.consulting@ebox.tninet.se
	b) Who the course is aimed at (minimum qualifications, prior experience.);	The course is aimed at young toxicologists, under 35, PhD or equivalent, with preferable some work experience.

	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	No
	d) Whether an individual scheme or part of a broader network;	RASS is performed on behalf of IUTOX, International Union of Toxicology, as service to the Toxicology Community
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	RASS, Risk Assessment Summer School, no established physical location but at various venues mainly somewhere in Europe. Course organiser: IUTOX c/o Malmfors Consulting AB Karlskronavägen 22,S-121 52 Johanneshov, SWEDEN tel +46-8-3119910,fax +46-8-301133 Email: malmfors.consulting@ebox.tninet.se
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	8 days full time. More details can be found on the website of IUTOX www.iutox.org/rass.asp , RASS training manual
	b) Language(s);	English
	c) Formal entry requirements (academic level, previous experience);	PhD/MSc in toxicology or equivalent discipline, biology and/or chemistry, work experience
	d) Number of trainees per annum;	25 per course
	e) Cost of participation and how participants are funded (own costs,	2600?, including fee and accommodation, 1/3 of the students, from developing countries, are given fellowships, solicited from various sponsors. Students from developed countries pay the fee themselves.

	grants); f) The qualification or certificate and the extent of its recognition;	A certificate signed by the President of IUTOX
	g) Balance of theoretical and "on-the-job" training.	Most of the training is theoretical but in a "hands-on training" fashion to 50 % of the course time. Furthermore the students have to spend considerable time (1-2 weeks) before the course preparing their own study case.
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	Risk assessment of exposure to any chemical or use of any chemical product. Most of the time is spent on discussing the study cases written by the students, first in break out groups, tutored by a faculty member, second in plenum, but also informally between students and faculty members. 2 hours of state-of -the-art lectures per day in the basic areas of toxicology. More details can be found on the website of IUTOX www.iutox.org/rass.asp , RASS training manual
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	In all positions where risk assessment is required. As the students have different affiliations; regulatory, academic and industrial, they get views on the requirements in different working situations.
4. Views of the scheme manager	a) Factors which influence participation in the scheme;	Personal ambitions and interests
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Marketing and a grant scheme.
	c) Evidence of application of the training in subsequent professional life;	More responsibility and higher positions

	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	As the RASS programme has been on for more than 20 years with about 300 students, they should be aware of its existence but few applications from students affiliated with the Community have been received. There is any potential for cooperation.
MSc Public Health / Health Protection	King's College London	
1. Management and administration of the scheme	a) Name, physical location and contact points;	Master of Public Health, MSc Public Health (Health Protection) Norman Parkinson Senior Lecturer. Department of Public Health Sciences, School of Medicine, King's College London, 7th Floor, Capital House, 42 Weston St, London SE1 3QD 0207 848 6618 Norman.Parkinson@kcl.ac.uk
	b) Who the course is aimed at (minimum qualifications, prior experience.);	Medical and non medical graduates with at least a second class honours degree, normally in a health related subject, who wish to seek leadership roles in public health agencies
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public	University Postgraduate Courses in a School of Medicine

	health or similar body; d) Whether an individual scheme or part of a broader network;	An individual Scheme but we are building links with the Health Protection Agency to provide accredited courses for their employees and others
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	Full time one year. Part-time two years or individual modules may be taken
	b) Language(s);	English only
	c) Formal entry requirements (academic level, previous experience);	Medical and non medical graduates with at least a second class honours degree, normally in a health related subject, who wish to seek leadership roles in public health agencies
	d) Number of trainees per annum;	25
	e) Cost of participation and how participants are funded (own costs, grants);	Home and EC students Full time: £4000 pa, part time £2000 Overseas students £15,000pa full time only
	f) The qualification or certificate and the extent of its recognition;	MSc Public Health, MSc Public Health (Health Protection)
	g) Balance of theoretical and "on-the-job" training.	Does not include on the job training but most students are part time and work in a public health agency

3. Technical nature of the course	The technical scope of the scheme (summary of the curriculum);	<p>Graduates:</p> <ul style="list-style-type: none"> have an understanding of risk assessment, risk perception, risk management and risk communication; understand the social, economic, environmental and genetic influences on health; be aware of the sources of information relating to population and health and how information is collected, analysed and published, and will have skills in data collection, presentation, analysis and interpretation; understand the principles of disease prevention and health promotion; have developed their oral and written communication skills; have an understanding of theories of organisational behaviour and management and their application to the improvement of public health services; have problem solving skills and be able to investigate and design an appropriate response to a public health problem; understand how public health policy is developed and implemented and be able to critically appraise existing and proposed policies, and be able to design, implement and present a research project.
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	HPA, PCTs, DoH, Local Authorities, NICE, Water and Sewerage Companies, NGOs, Private consultancies
4. Views of the scheme manager	Factors which influence participation in the scheme;	If you are referring to our programme it is usually the availability of time off work and programme fees that limit participation
	Measures that could increase awareness of the availability of the scheme and greater participation;	We have no trouble in recruiting to our mainstream public health programme but we want to develop specialist modules to attract Health Protection and Environmental Health personnel
	Evidence of application of	All graduates have gone on to management level jobs in the public health industry

	the training in subsequent professional life;	in UK EC and overseas.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	I don't know enough and would be happy to participate/learn more
MSc Environmental Health	King's College London	
1. Management and administration of the scheme	a) Name, physical location and contact points;	MSc Environmental Health Michael Howard Lecturer. Department of Geography, School of Social Sciences and Public Policy, King's College London, Strand, London WC2R 2LS 0207 836 5454 Michael.howard@kcl.ac.uk
	b) Who the course is aimed at (minimum qualifications, prior experience.);	Science graduates with at least a second class honours degree who wish to qualify as Environmental Health Practitioners
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public	University Postgraduate Course

	health or similar body; d) Whether an individual scheme or part of a broader network;	This programme is accredited by the Chartered Institute of Environmental Health (CIEH) and the Environmental Health Registration Board (there are about 12 such courses)
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	Part-time two years
	b) Language(s);	English only
	c) Formal entry requirements (academic level, previous experience);	Science graduates with at least a second class honours degree,
	d) Number of trainees per annum;	25
	e) Cost of participation and how participants are funded (own costs, grants);	Home and EC students part time c£2500 per year for two years Some students are self funded others through employers and the PATH scheme
	f) The qualification or certificate and the extent of its recognition;	MSc Environmental Health
	g) Balance of theoretical and "on-the-job" training.	Does not include on the job training but most students are part time and work in a public health agency

3. Technical nature of the course	The technical scope of the scheme (summary of the curriculum);	A risk-based approach runs through the course and this encourages students to develop prioritised interventions and solutions. The programme looks in detail at: pollution and environmental protection, food safety and control, housing conditions and workplace safety, and considers technical, legal and social solutions. As well as promoting a risk-based approach the programme also focuses on developing intervention strategies within a wider public health context. Students are encouraged throughout to view environmental health as an integrated approach to health protection and improvement, rather than as a series of unconnected activities.
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Normally in Local authority environmental health services but also in national government agencies (HPA, EA, DEFRA, etc) and in the private sector
4. Views of the scheme manager	Factors which influence participation in the scheme;	Career motivation to environmental health and availability of fees and vocational training
	Measures that could increase awareness of the availability of the scheme and greater participation;	A national scheme for funding of vocational placement is needed
	Evidence of application of the training in subsequent professional life;	All environmental health graduates from here have soon found employment in the industry
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	Please tell us more

MSc and MA Risk Analysis	King's College London	
1. Management and administration of the scheme	a) Name, physical location and contact points;	MSc and MA Risk Analysis Renee Miller or Henry Rothstein, Department of Geography, School of Social Sciences and Public Policy, King's College London, Strand, London WC2R 2LS 020 7848 1214 renee.2.miller@kcl.ac.uk
	b) Who the course is aimed at (minimum qualifications, prior experience.);	Applicants with 2:1 first degree in social science, geography or environmental studies
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	University Postgraduate Course
	d) Whether an individual scheme or part of a broader network;	Individual Scheme
	e) If part of a network, description of the other partners, countries	

	involved and the coordination mechanism.	
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	One year FT, two years PT, September to September.
	b) Language(s);	English only
	c) Formal entry requirements (academic level, previous experience);	2:1 first degree in social science, geography or environmental studies
	d) Number of trainees per annum;	15
	e) Cost of participation and how participants are funded (own costs, grants);	PT Home: £3090 (2007) PT Overseas: £5665 (2007) FT Home: £6180 (2007) FT Overseas: £11330 (2007) Bursaries are available for this degree - applicants are automatically considered upon receipt of a completed application form
	f) The qualification or certificate and the extent of its recognition;	MA or MSc Risk Analysis
	g) Balance of theoretical and "on-the-job" training.	Does not include on the job training but most students are part time and work in a public health agency
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	The programme provides a knowledge and understanding of the following: a) The role of risk in public policy, regulation and governance; b) The concepts, techniques and approaches to the assessment, management and communication of risk across many risk fields; c) The institutional and organisational mechanisms for the management and

		governance of risk; d) Ethical issues in research on risk. Students take the equivalent of four course units, which can be made up of combinations of course modules of whole or half units. Core course modules comprise Risk Communication, Risk Governance, Risk Management, Research Methods in Human Geography and a dissertation
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Graduates go on to research or enter careers in risk assessment, management or communication in industry, consultancy, government and non-governmental organizations
4. Views of the scheme manager	a) Factors which influence participation in the scheme;	Career motivation and availability of fees and vocational training
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	No comment at present
	c) Evidence of application of the training in subsequent professional life;	No comment at present
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	Please keep us informed of cooperation possibilities

MSc on Toxicology and Environmental Health	Utrecht University	
1. Management and administration of the scheme	a) Name, physical location and contact points;	MSc on Toxicology and Environmental Health Utrecht University, Utrecht, the Netherlands Contact: ms Mieke Lumens, PhD, Msc coordinator (m.lumens@iras.uu.nl)
	b) Who the course is aimed at (minimum qualifications, prior experience.);	Entrance requirements: Fluency in English (to be proven by TOEFL test score) BSc in either Biology, Biomedical Sciences, Environmental Sciences, (Veterinary) Medicine
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	A graduate scheme, managed by a public university
	d) Whether an individual scheme or part of a broader network;	An individual scheme
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	NA
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	2 year full time programme (120 ECTS)
	b) Language(s);	English

	c) Formal entry requirements (academic level, previous experience);	Fluency in English (to be proven by TOEFL test score) BSc in either Biology, Biomedical Sciences, Environmental Sciences, (Veterinary) Medicine
	d) Number of trainees per annum;	We aim at 20/annum, so far we get less (average 10/annum)
	e) Cost of participation and how participants are funded (own costs, grants);	€1,500/year ie €3,000/entire programme for EU students, €10,000/year, ie €20,000/entire programme for non-EU students Dutch students get governmental support, the MSc programme is on the NUFFIC list (Dutch organization for international cooperation in higher education), this implies that foreign students can apply for a scholarship. So far however no student has received a NUFFIC grant.
	f) The qualification or certificate and the extent of its recognition;	Nationally certified MSc degree
	g) Balance of theoretical and "on-the-job" training.	About 85% research/practice, 15% theoretical courses
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	10 weeks theoretical core courses 9 months major research project, to be carried with IRAS 6-month minor research programme, usually done outside Utrecht University (about 50% of students do their minor abroad) 6-week literature survey 6 weeks of theoretical courses chosen by individual interest and background
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Universities, national bodies, regional bodies, industry. Scientific advisory bodies, occupational health services, municipal health services
4. Views of the scheme	a) Factors which	Lack of interest in/awareness of environmental problems

manager	influence participation in the scheme;	Costs of the programme for non-EU students: many apply, but only few succeed to acquire the funding
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	We do our best to attract students by providing information at every possible occasion, pointing out the relevance and need for this type of research and experts. And pointing out that all graduates find jobs in their field of study. In the years to come employment will only increase, eg due to REACH regulations. In order to attract students we are organizing a Summerschool for undergraduate students. EU funding for travel could possibly enhance the number of international participants.
	c) Evidence of application of the training in subsequent professional life;	So far our graduates all found employment either as researcher or as consultant in the field of Toxicology and Environmental Health
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	We participate in the FP7 proposal for a Marie Curie European Master in Environmental Health (EMEH). In this cooperation we hope to achieve better cooperation between European groups providing the same type of education. We hope to attract a suitable number of students to make these educational programmes cost effective.
Joint Master of Inland Water Quality Assessment	Telemark University	
1. Management and administration of the scheme	a) Name, physical location and contact points;	Joint Master of Inland Water Quality Assessment, Telemark University College, Norway. Contact person: Synne Kleiven, Assoc. Prof. Limnology
	b) Who the course is aimed at (minimum qualifications, prior	Students with a Bachelor degree in biological science or in environmental science, with 180 ECTS or equivalent (3 years of full-time study)

	experience.); c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	It is a formal University post graduate program (master program).
	d) Whether an individual scheme or part of a broader network;	The program is part of a broader Joint master network.
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	Partners in this Joint master program are Mälardalen University (Co-ordinator Sweden), Telemark University College (Norway), University of Insubria (Italy), Cork Institute of Technology (Ireland), Lithuanian University of Agriculture (Lithuania), University of Latvia (Latvia), Autonomous University of Madrid (Spain), Masaryk University - Research Centre for Environmental Chemistry and Ecotoxicology (Czech Republic), University of Veszprem (Hungary), University of Lodz (Poland), Aristotle University of Thessaloniki (Greece), Slovak Academy of Science - Institute of Botany (Slovakia), University of Algarve (Portugal), Alexandrian Technological Educational Institute of Thessaloniki (Greece) and Helsinki University (Finland).
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	2 year full time (120 ECTS)
	b) Language(s);	English
	c) Formal entry requirements (academic level, previous experience);	Students with a Bachelor degree in biological science or in environmental science, with 180 ECTS or equivalent (3 years of full-time study).

	d) Number of trainees per annum;	A minimum of 10 students
	e) Cost of participation and how participants are funded (own costs, grants);	Norwegian Governmental money
	f) The qualification or certificate and the extent of its recognition;	The student who successfully fulfils the necessary requirements will be awarded a Masters degree in Environmental Science in the field of Inland Water Quality Assessment. The Diploma will show the students course achievements, the title of the diploma work and the names of the participating universities.
	g) Balance of theoretical and "on-the-job" training.	An important part of the program is field and laboratory work. The learning outcome of the program is based on the balance between theoretical and practical skills. The Master thesis (30 or 60 ECTS) will be a research project (in most cases including field- and laboratory work) dealing with a problem in Environmental science focused on Inland Water Quality Assessment.
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	The programme consists of 6 mandatory courses worth 6 ECTS credits each, 1 mandatory course worth 4 ECTS credits, 24 elective courses (each worth 4 ECTS credits) and a diploma component valued at 30 – 60 ECTS credits. Mandatory courses: Environmental law, Ecological risk assessment, Aquatic ecology, Bioindicators, Biological monitoring, Chemical monitoring, Environmental informatics Elective courses: Health risks, Ecological certification, Sewage and Wastewater treatment, Groundwater, Water treatment, Applied Hydrology, Remediation, Ecotoxicology, Ecotoxtests/bioassays, Anthropogenic pollution, Ichthyology, Environmental economy, Environmental embryotoxicity and teratogenesis, Applied algology, Molecular ecotoxicology, Applied Aquatic Microbiology, Case studies

		<p>Water catchment, Sedimentology, Biodiversity, Population genetics, Eutrophication Predictive limnology, Environmental GIS, Oligotrophic lakes, Biostatistics.</p> <p>Diploma work (30 or 60 ECTS)</p> <p>Structure and progression in the programme</p> <p>1st year: 1. sem - Mandatory courses 30 ECTS, 2. sem - Mandatory courses 10 ECTS / Elective courses 20 ECTS</p> <p>2nd year: 3. sem - Diploma work 30 ECTS, 4. sem - Diploma work 30 ECTS or</p> <p>2nd year: 3. sem - Elective courses 30 ECTS, 4. sem - Diploma work 30 ECTS</p> <p>To fulfil the requirements the students also have to study at two different universities</p>
	b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	Local, regional and/or national environmental agencies and private water companies. Master students performing a 60 ECTS master thesis will also in many cases be qualified to join further water research at the Universities (Ph.D. studies).
4. Views of the scheme manager	a) Factors which influence participation in the scheme;	possibilities for foreign students to get grants, number of Universities offering the program (only 2 Universities in 2007/2008), there are a very slow quality assurance process going on in some countries
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Erasmus mundus status or equal will give students outside Europe the possibility to get grants for studying in a European country. This will probably lead to greater participation.
	c) Evidence of application of the training in subsequent professional life;	The master program has aims and objectives to produce students with skills to perform actions needed to aid local, regional and national environmental agencies and water managers in their effort to comply with the European Water Framework Directive
	d) Awareness of the work	

	of Community Scientific Risk assessment bodies and the potential for cooperation.	
Postgraduate Toxicology	Medical University Vienna	
1. Management and administration of the scheme	a) Name: University Course for Postgraduates in Toxicology	<p>Course Director: Prof. DDr. Rolf Schulte-Hermann Deputy Course Director: Prof. Dr. Wolfram Parzefall Secretariate: Mag. Marianne Wang Telephone: +43-1-4277-65131 Fax: -65193 e-mail: rolf.schulte-hermann@meduniwien.ac.at wolfram.parzefall@meduniwien.ac.at ADDRESS: Research Unit Toxicology and Prevention Institute of Cancer Research Clinic of Internal Medicine Medical University Vienna – MUW Borschkegasse 8a, 1090 Vienna, Austria</p>
	b) PARTICIPANTS:	Postgraduate (doctoral) students and professionals in health authorities, industry or universities.
	c)	Formal University postgraduate scheme managed by the Medical University of Vienna.
	d)	

	e)	Individual scheme, very similar to the German scheme. Development of a network with other countries is under way. Current negotiations with Slovenia and Slovakia.
2. Organisation of the course	a)	Three years, full time, practical training on-the-job
	b)	English
	c)	Academic education with Graduation, previous experience welcome but no condition
	d)	10 per annum
	e)	Full Fee: Euro 1,500.- per semestre, 9,000,- full course Participants are funded by own costs, employer or grants.
	f)	Master of Science (Toxicology), Medical University Vienna. Recognized by EUROTOX as fulfilment of theoretical and practical education and training requirements
	g) Balance of theoretical and "on-the-job" training,	Theory 550 teaching hours, on the job training: 3 years full time, master thesis. ECTS-CREDITS: Practical toxicological work 120, master thesis 15, Theory (modules) 45 credits.
3. Technical nature of the course	a)	Toxicology is a multidisciplinary science. The course provides comprehensive knowledge and skills in one field of toxicology, and acquisition of at least basic knowledge in the other relevant fields of toxicology. Completion of the course requires - three years of full-time practical toxicological work in recognized institutions. Success is documented by a Master Thesis which consists of at least three publications or comprehensive scientific reports in the area of toxicology - attendance of 15 modules (table) providing theoretical knowledge in the different

		fields of toxicology. Modules consist of lectures, demonstrations, visits, and exercises.
	b)	National and international authorities, industry, scientific advisory bodies, research institutions.
4. Views of the scheme manager	a)	?
	b)	Official recognition by national authorities and by the European Commission, of the Master title in Toxicology or of the European Registration as Toxicologist. This recognition should result in that official toxicological reports or other documents must be signed by a master of Toxicology or European Registered Toxicologist (ERT).
	c)	The trainees of our previous courses work in national and international chemical or pharmaceutical companies, national and international authorities, in Toxicology contract laboratories, as consultants in toxicology, advisory bodies, etc
	d)	We are of course aware of the DG Sanco Scientific Committees and other Commission activities in risk assessment. We have worked for them and are interested in further collaboration.
Courses - Animal agriculture and food safety risk analysis	Vose Consulting	
1. Management and administration of the scheme	a) Name, physical location and contact points;	Course name: Animal agriculture and food safety risk analysis Physical location: Fort Collins, CO, USA Contact points: Mr. David Vose david@voseconsulting.com Dr. Huybert Groenendaal Huybert@voseconsulting.com Dr. Francisco J. Zagmutt Francisco@voseconsulting.com

		2891 20th Street, Boulder, CO, 80304 - USA Phone +1 303 440 8524 Toll Free: 1 866 259 7434 Fax: +1 303 440 0320
	b) Who the course is aimed at (minimum qualifications, prior experience.);	Epidemiologists, Medical doctors, Veterinarians, toxicologists, microbiologists, public health specialists, statisticians, applied mathematicians, agronomists, and anyone working in human, animal or plant health that needs to conduct, present or critique risk analyses. Also, the course is aimed to scientists providing input to a risk assessment.
	c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;	Most sections of the course have been taught at the post-graduate level in universities in the US and Europe.
	d) Whether an individual scheme or part of a broader network;	Individual scheme. However, as described in question (c) this course has been offered for post-graduate level credits in several universities.
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	The courses are entirely developed by Vose Consulting staff.
2. Organisation of the course	a) Duration (part time, full time, on-the-job training);	Two weeks (10 days) full time.
	b) Language(s);	English, Spanish, French and Dutch.
	c) Formal entry	Basic knowledge of statistics and reasonable proficiency in Microsoft Excel® and

	requirements (academic level, previous experience);	the windows® environment.
	d) Number of trainees per annum;	15-20. This can be expanded depending on demand.
	e) Cost of participation and how participants are funded (own costs, grants);	Both own costs and grants depending on institution.
	f) The qualification or certificate and the extent of its recognition;	The course has been taught for over a decade and is widely recognized in the epidemiology, toxicology, microbiology, and health fields. The course is recognized as among the best and most thorough training courses in risk analysis in epidemiology and food safety. This is demonstrated by the continuous worldwide demand for this course throughout the years.
	g) Balance of theoretical and "on-the-job" training.	The course is centered on "hands-on" skills using simulation modeling software and applied examples. However, special care is placed on reviewing the theory behind all the models presented during the course.
3. Technical nature of the course	a) The technical scope of the scheme (summary of the curriculum);	The course is divided in two modules that can be taken together or independently: MODULE 1: INTRODUCTION TO RISK ANALYSIS, SOFTWARE, STOCHASTIC PROCESSES AND THEIR MODELLING Introduction to risk analysis Introduction to risk assessment: Difficulties in modelling biological systems Introduction to risk analysis modelling methods Typical modelling results, their presentation and interpretation Introduction to descriptive statistics Introduction to probability theory Binomial Process Problems to solve

		<p>Nested binomials Poisson process Mixed Poisson and binomial processes Renewal process and its modeling Hypergeometric process Central Limit Theorem Markov process MODULE 2: ADVANCED RISK ANALYSIS MODELLING Predictive microbiology Dose-response modeling A new hierarchal framework for building risk analysis models Reviewing published models within the new framework Uncertainty and variability Classical statistics Bayes' Theorem The Bootstrap Analysing and using data: Determining distributions from data Presenting risk analysis quantitative results Report writing A new method for validating models and their results Attendants to only module 2 should ensure that they have already taken a course equivalent to Module 1 or possess the equivalent knowledge. For a detailed curriculum please visit the course website at http://www.voseconsulting.com/training_ahafsra.htm</p>
	<p>b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).</p>	<p>Official human health services, official veterinary services, environmental agencies, private consulting practice, clinical and non-clinical studies for the pharmaceutical industry, applied research and development departments, decision making positions such as scientific advisory committees, expert witness</p>

4. Views of the scheme manager	a) Factors which influence participation in the scheme;	Most of our attendees learn about our course through word of mouth. The course is very applied but also covers the mathematical theory behind the teachings, which makes it particularly attractive to our course participants.
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Broader advertisement and promotion to the scientific and professional community.
	c) Evidence of application of the training in subsequent professional life;	Most of our course attendees are professionals that need our training to perform, review or provide information for risk assessments. Our course evaluation includes questions on the usability and applicability of the material covered for the participant professional needs, and the answers are always positive.
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	Our consultants are involved with several international risk analysis scientific committees including the OIE, WHO, and FAO as authors and/or editors. David Vose, the senior partner of Vose Consulting is a reference in the field of risk analysis in epidemiology and animal health. The resulting experience is incorporated and constantly updated in our courses.
Nanotechnology ... and (its) ethical implications	Delft University of Technology in Delft	
1. Management and administration of the scheme	a) Name, physical location and contact points;	Dr David Bennett, Susanne Sleenhoff & Daan Schuurbiens Delft University of Technology in Delft, The Netherlands Co-ordination Office: Julianalaan 67 NL-2628BD Delft The Netherlands
	b) Who the course is aimed at (minimum qualifications, prior experience.);	For all those working in nanotechnology with an interest in its public communication and ethical implications
	c) Whether a formal University graduate or	Managed as part of the NanoBio-RAISE project. This is an EU funded project. For further information:

	post graduate schemes, managed by a national body, school of public health or similar body;	http://files.nanobio-raise.org/Downloads/nbrp2.pdf
	d) Whether an individual scheme or part of a broader network;	Part of the NanoBio-RAISE project in which other partners are involved
	e) If part of a network, description of the other partners, countries involved and the coordination mechanism.	
2. Organisation of the course	Duration (part time, full time, on-the-job training);	
	b) Language(s);	English
	c) Formal entry requirements (academic level, previous experience);	See who the course is aimed at. That can range from bachelors to professors.
	d) Number of trainees per annum;	25
	e) Cost of participation and how participants are funded (own costs, grants);	Early bird €350,- or €450,- grants are available and are offered on base of Cv and letter of motivation
	f) The qualification or certificate and the extent of its recognition;	All participants receive a certificate after successful participation of the course

	g) Balance of theoretical and "on-the-job" training.	50-50%
3. Technical nature of the course	The technical scope of the scheme (summary of the curriculum);	For further information: http://files.nanobio-raise.org/Downloads/nbrp2.pdf
	Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).	All bodies mentioned and more, everywhere communication and ethics of nanotechnology can be applied
4. Views of the scheme manager	Factors which influence participation in the scheme;	Availability, allowed to be absent for a week, accreditation etc
	b) Measures that could increase awareness of the availability of the scheme and greater participation;	Make the course certified, awareness of the course amongst people in science/Universities, policy Industry etc
	c) Evidence of application of the training in subsequent professional life;	?
	d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.	?

Appendix 6

Follow up letter and questionnaire sent to those providers identified in the 'high' and 'medium' relevant categories.

To: [Name / 'The Course Administrator']
[Address / web or email address]

Risk Assessment training schemes of relevance to the work of the non-food scientific committees established by Commission decision 2004/210/EC

Dear Sir / Madam,

This is an invitation for you to contribute toward a study currently being carried out by the Central Science Laboratory CSL for the European Commission, DG Sanco.

The purpose and context of this study is to compile an inventory of training schemes needed to support the Directorate General for Health and Consumer Protection in order to assist their management of three scientific committees who give the Commission advice in the areas of Consumer Safety, Public Health and the Environment. These are:

- Scientific Committee on Consumer Products (SCCP)
- Scientific Committee on Health and Environmental Risks (SCHER)
- Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)

The Directorate General for Health and Consumer Protection wishes to ensure that a sufficient number of younger scientists continue to become available to serve on the scientific committees. This, in turn, requires that sources of training are available, which can be accessed as may be required to develop the knowledge and expertise in Risk Assessment of those younger scientists so that they can be technically competent to carry out their relevant duties on behalf of the Commission.

In its first phase, the study has identified **your organisation** as one appearing to offer such training. It would be extremely helpful to us if you would supply us with further information, as listed in the attached questionnaire, in order for your organisation to be included in our final report. Types of Risk Assessment training schemes covered by the study include formal University graduate and post graduate schemes, schemes managed by national bodies, schools of public health or similar bodies and exchange schemes.

We are seeking responses **by the beginning of June 2007**.

Responses should be sent back to John Cowl j.cowl@csf.gov.uk. If you would like more information about this work, please contact either John Cowl or Andrew Gilbert a.gilbert@csf.gov.uk who will be pleased to answer questions.

With thanks in advance.

QUESTIONNAIRE

Identity of training scheme:

1. Management and administration of the scheme

- a) Name, physical location and contact points;
- b) Who the course is aimed at (minimum qualifications, prior experience.);
- c) Whether a formal University graduate or post graduate schemes, managed by a national body, school of public health or similar body;
- d) Whether an individual scheme or part of a broader network;
- e) If part of a network, description of the other partners, countries involved and the coordination mechanism.

2. Organisation of the course

- a) Duration (part time, full time, on-the-job training);
- b) Language(s);
- c) Formal entry requirements (academic level, previous experience);
- d) Number of trainees per annum;
- e) Cost of participation and how participants are funded (own costs, grants);
- f) The qualification or certificate and the extent of its recognition;
- g) Balance of theoretical and "on-the-job" training.

3. *Technical nature of the course*

- a) The technical scope of the scheme (summary of the curriculum);
- b) Where trainees would expect to apply their training (national bodies, industry, scientific advisory bodies).

4. *Views of the scheme manager*

- a) Factors which influence participation in the scheme;
- b) Measures that could increase awareness of the availability of the scheme and greater participation;
- c) Evidence of application of the training in subsequent professional life;
- d) Awareness of the work of Community Scientific Risk assessment bodies and the potential for cooperation.