

OVERVIEW: RECOMMENDATIONS ON THE FRAMEWORK FOR DOCTORAL TRAINING IN THE CONTEXT OF THE EUROPEAN HIGHER EDUCATION AND RESEARCH AREAS

Doctoral training has gained greater importance on the European Higher Education Agenda since the Berlin Communiqué in 2003. Through a series of national and European workshops and conferences an intensive dialogue between higher education policy makers, universities and practitioners was initiated which reflects the need to adapt research training to meet the challenges of the global labour market with new profiles and demands of doctoral candidates.

In consequence, we are now faced with a plethora of recommendations, position papers, studies which call for a new action line.

To facilitate this process this recommendation offers a comprehensive overview, structured along thematic aspects, taken from the following national and European documents:

1. Doctoral Programmes for the European Knowledge Society, Final Report, European University Association, October 2005
http://www.eua.be/eua/jsp/en/upload/Doctoral_Programmes_Project_Report.1129278878120.pdf (EUA Report 2005)
2. Doctoral Education in Austria, Defining a National Position in the Context of European Developments, ÖRK/bmbwk, January 2005
<http://www.reko.ac.at/upload/Positionspapier.pdf> (German) (ÖRK/bm:bwk)
3. Conclusions and Recommendations on Doctoral Programmes in the European Knowledge Society, Salzburg 2005
http://www.bmbwk.gv.at/medienpool/12348/conclusions_sbg.pdf (Salzburg "ten basic principles")
4. Bergen Communiqué, May 2005 http://www.bmbwk.gv.at/medienpool/12742/bergen_communique2005_en.pdf (Bergen Communiqué)
5. The European Charter for Researchers and The Code of Conduct for the Recruitment of Researchers, March 2005
<http://europa.eu.int/eracareers/europeancharter/> (CC)
6. Recommendation „Future DOC“, April 2006 <http://www.doktorat.at/index.html.97> (German) (Future DOC)
7. “Doctoral Schools study”, Joanneum Research , 2006 (Doctoral Schools study)

Content:

1. General conditions at institutional level
2. Organisation of doctoral education
3. Status and funding of doctoral candidate
4. Recruitment practice - Selection of candidates
5. Supervision
6. Qualification requirements, responsibilities and duties of supervisor
7. Training and workload of supervisors
8. Monitoring and Assessment Procedures of doctoral candidates
9. Career development and Personal Development Plans (PDP)
10. Research Environment - Integration of doctoral candidates in Research Groups, Clusters and Networks – critical mass
11. Internationalisation/Mobility (geographical, interdisciplinary, inter-sectoral)
12. Requirements for the Doctoral Thesis
13. Follow-up and Tracking of PhD Graduates

Objectives – 1. General conditions at institutional level	Reference
<ul style="list-style-type: none"> • doctoral education and awarding a doctoral degree is one of the core missions of the university 	EUA Report 2005
<ul style="list-style-type: none"> • With major changes in a competitive and diversified global labour market, requiring more mobility, flexibility, adaptability and highly specified expertise, universities face a challenge to reform doctoral programmes in order to adapt to new conditions. 	EUA Report 2005
<ul style="list-style-type: none"> • Embedding in institutional strategies and policies: universities as institutions need to assume responsibility for ensuring that the doctoral programmes and research training they offer are designed to meet new challenges and include appropriate professional career development opportunities. 	Salzburg "ten basic principles"
<ul style="list-style-type: none"> • Reforms in doctoral training need, to be firmly embedded in institutional policies and practices and each university had to take responsibility for the further development of its policies and regulations governing quality assessment and supervision 	EUA Report 2005
<ul style="list-style-type: none"> • Need for clearly defined guidelines, codes and regulations at institutional level on: recruitment, supervision, exams, evaluation, defence, rights and duties of candidate, qualification requirements, responsibilities and duties of supervisor, career evaluation/appraisal systems, IPR etc... 	EUA Report 2005
<ul style="list-style-type: none"> • Implementation of The European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers 	CC
<ul style="list-style-type: none"> • The recommendations embodied in the European Charter for Researchers for early stage researchers shall be implemented in Austria 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • The project findings underscore the point that universities will need to be fully engaged in the future implementation of the Researchers' Charter and Code of Conduct at the national and regional level if they wish to attract and retain high quality doctoral candidates for their research and innovation programmes 	EUA Report 2005
<ul style="list-style-type: none"> • Recruitment: Employers and/or funders should ensure that the entry and admission standards for researchers, particularly at the beginning at their careers, are clearly specified and should also facilitate access for disadvantaged groups or for researchers returning to a research career, including teachers (of any level) returning to a research career. Employers and/or funders of researchers should adhere to the principles set out in the Code of Conduct for the 	CC

Objectives – 1. General conditions at institutional level	Reference
<p>Recruitment of Researchers when appointing or recruiting researchers.</p>	
<ul style="list-style-type: none"> • Non-discrimination: Employers and/or funders of researchers will not discriminate against researchers in any way on the basis of gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition. 	CC
<ul style="list-style-type: none"> • Gender balance: Employers and/or funders should aim for a representative gender balance at all levels of staff, including at supervisory and managerial level. This should be achieved on the basis of an equal opportunity policy at recruitment and at the subsequent career stages without, however, taking precedence over quality and competence criteria. To ensure equal treatment, selection and evaluation committees should have an adequate gender balance <ul style="list-style-type: none"> • See SEC (2005) 260, Women and Science: Excellence and Innovation - Gender Equality in Science. 	CC
<ul style="list-style-type: none"> • The gender dimension is an important factor to be taken into account, as many female doctoral candidates often have to interrupt their studies during maternity leave. Therefore, a flexible approach to the timeframe of doctoral programmes is crucial. 	EUA Report 2005
<ul style="list-style-type: none"> • In order to ensure equal opportunities for women and men in academe, appropriate attention has to be paid already on the doctoral and post-doc level to providing for the professional advancement of women and to removing existing barriers to gender equality (compatibility of professional and family obligations). 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • Formulation of concrete measures to achieve Gender Equality 	Doctoral Schools Study
<ul style="list-style-type: none"> • Employers and/or funders should aim to provide working conditions, which allow both women and men researchers to combine family and work, children and career. Particular attention should be paid, inter alia, to flexible working hours, part-time working, tele-working and sabbatical leave, as well as to the necessary financial and administrative provisions governing such arrangements. 	CC
<ul style="list-style-type: none"> • Age restrictions in the context of funding opportunities for individual students may not always have the intended result and shall be reconsidered also for the purpose of advancing lifelong learning opportunities. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • Ensure most stimulating research environment and working conditions with adequate resources in support of the agreed work programme. 	CC

Objectives – 1. General conditions at institutional level	Reference
<ul style="list-style-type: none"> Employers and/or funders should introduce for all researchers, including senior researchers, evaluation/appraisal systems for assessing their professional performance on a regular basis and in a transparent manner by an independent (and, in the case of senior researchers, preferably international) committee. 	CC
<ul style="list-style-type: none"> Complaints/appeals procedures system forms a part of the general university official procedure for appeals and complaints within the existing codes of practice. 	EUA Report 2005
<ul style="list-style-type: none"> Complaints/appeals: Employers and/or funders of researchers should establish, in compliance with national rules and regulations, appropriate procedures, possibly in the form of an impartial (ombudsman-type) person to deal with complaints/appeals of researchers, including those concerning conflicts between supervisor(s) and early-stage researchers. Such procedures should provide all research staff with confidential and informal assistance in resolving work-related conflicts, disputes and grievances, with the aim of promoting fair and equitable treatment within the institution and improving the overall quality of the working environment. 	CC
<ul style="list-style-type: none"> Researchers participation in decision-making bodies: Employers and/or funders of researchers should recognise it as wholly legitimate, and indeed desirable, that researchers be represented in the relevant information, consultation and decision-making bodies of the institutions for which they work, so as to protect and promote their individual and collective interests as professionals and to actively contribute to the workings of the Institution In this context see also EU Directive 2002/14/EC. 	CC
<ul style="list-style-type: none"> Appropriate protection of Intellectual Property Rights including copyrights of researchers 	CC
<ul style="list-style-type: none"> Recognition of Co-authorship: Co-authorship should be viewed positively by institutions when evaluating staff, as evidence of a constructive approach to the conduct of research. Employers and/or funders should therefore develop strategies, practices and procedures to provide researchers, including those at the beginning of their research careers, with the necessary framework conditions so that they can enjoy the right to be recognised and listed and/or quoted, in the context of their actual contributions, as co-authors of papers, patents, etc, or to publish their own research results independently from their supervisor(s). 	CC
<ul style="list-style-type: none"> In cases of doctoral candidate's active participation in research groups, universities need to ensure clear rules on co-authorship in order to protect the intellectual property of the doctoral candidate as well as that of the other members of the research group. 	EUA Report 2005

Objectives – 1. General conditions at institutional level	Reference
<ul style="list-style-type: none"> • Promotion of innovative structures to meet the challenge of interdisciplinary training and the development of transferable skills. 	Salzburg "ten basic principles"
<ul style="list-style-type: none"> • Career development strategy: Employers and/or funders of researchers should draw up, preferably within the framework of their human resources management, a specific career development strategy for researchers at all stages of their career, regardless of their contractual situation, including for researchers on fixed-term contracts. It should include the availability of mentors involved in providing support and guidance for the personal and professional development of researchers, thus motivating them and contributing to reducing any insecurity in their professional future. All researchers should be made familiar with such provisions and arrangements. 	CC
<ul style="list-style-type: none"> • Qualification requirements, responsibilities and duties of a supervisor should be clearly defined in institutional regulations at each university 	EUA Report 2005
<ul style="list-style-type: none"> • Quality of doctoral training depends highly on supervision. It is, therefore, each university's responsibility to guarantee development of high quality supervision and continuous professional development of supervisors which is central to the research mission of the university. 	EUA Report 2005
<ul style="list-style-type: none"> • To increase the awareness of supervisors' responsibilities, some universities produce handbooks, guidelines and codes for supervisors. 	EUA Report 2005
<ul style="list-style-type: none"> • External Quality assurance, (monitoring, ex-ante, Interim, ex post office evaluation) 	Doctoral Schools Study
<ul style="list-style-type: none"> • Program support by developing procedures and guidelines, regulations and rule and contracts, organization of ex-ante, Interim, ex post office evaluation as well as monitoring, public relations etc.... 	Doctoral Schools Study
<ul style="list-style-type: none"> • Emphasize visibility and international reputation through regular updating and communicating of findings, regular Website support, regular organisation of events 	Doctoral Schools Study
<ul style="list-style-type: none"> • Universities have a particular responsibility in establishing sound practices and information bases to collect and up-date data through surveys and other "tracking" instruments utilising ICT facilities (systematic collection and analysis of "key indicator" data such as data on completion rates and career outcomes) 	EUA Report 2005

Objectives – 2. Organisation of doctoral education	Reference
<ul style="list-style-type: none"> The core component of doctoral training is the advancement of knowledge through original research. At the same time, it is recognised that doctoral training must increasingly meet the needs of an employment market that is wider than academia. 	Salzburg "ten basic principles"
<ul style="list-style-type: none"> The universities are solely responsible for the design and organisation of doctoral programmes and research training as part of their institutional autonomy. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> The purpose of doctoral studies is the advancement of a candidate's aptitude to conduct original research on the basis of the qualifications that she or he acquired during Master-level studies. Specific learning outcomes shall be defined for individual disciplines and study programmes. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> Doctoral programmes in Austria shall be primarily research-oriented. Doctoral candidates shall be closely involved in research and shall be integrated in the scientific community of their respective disciplines. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> Need for structured doctoral programmes 	Bergen Communiqué
<ul style="list-style-type: none"> Curricula of doctoral programmes shall be more structured in the future than has been the case so far. In some disciplines, this may also lead to more coursework. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> Increase the number of structured doctoral programmes in Austria 	Doctoral Schools Study
<ul style="list-style-type: none"> Overregulation of doctoral programmes must be avoided 	Bergen Communiqué
<ul style="list-style-type: none"> The normal workload of the third cycle in most countries would correspond to 3-4 years full time. 	Bergen Communiqué
<ul style="list-style-type: none"> The minimum required duration of doctoral programmes shall be three years (full-time). Moreover, there should be the option to study part-time. 	ÖRK/bm:bwk

Objectives – 2. Organisation of doctoral education	Reference
<ul style="list-style-type: none"> Duration: doctoral programmes should operate within appropriate time duration (three to four years full-time as a rule). 	Salzburg "ten basic principles"
<ul style="list-style-type: none"> The normal workload of the third cycle in most countries would correspond to 3-4 years full-time. 	Bergen Communiqué
<ul style="list-style-type: none"> A standard timeframe for completion of a doctoral degree was judged to be 3 to 4 years in case of fulltime studies. In order to help assure high scientific integrity and quality of doctoral training and a higher completion rate, universities would ideally prefer 4 years full-time and fully funded doctoral programmes. In any event, it was essential that sufficient time is allocated for the actual thesis work (recommended time is 2.5 years). For multidisciplinary programmes, a minimum of a 4 years timeframe should be a rule as it entailed more time to gain necessary competences in required disciplines. Various factors have an impact on the duration of studies, mainly disciplinary differences. Research in the disciplines based on experiments in laboratories or long-term fieldwork requires certain amount of time that cannot easily be shortened. Other circumstances, often of personal character such as starting a family also have an influence on the length of studies. 	EUA Report 2005
<ul style="list-style-type: none"> Part-time doctoral training requires a longer timeframe than full-time studies (usually 5 - 6 years). Doctoral candidates are sometimes allowed to combine full-time and part-time form of studies due to their personal or financial situation. With changing demographic trends in Europe, doctoral training may be seen as a part of "life-long learning" in line with the Lisbon objectives. This, however, requires a more flexible approach with regards to both the organisation and duration of doctoral studies for part-time doctoral candidates. 	EUA Report 2005
<ul style="list-style-type: none"> The current legal framework on admission to doctoral programmes will have to be reconsidered. Admission shall be organised independently in a competitive manner by each university, as doctoral programmes constitute an essential part of institutional policies and strategies. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> University Commitment and support for structural developments are crucial 	Doctoral Schools Study
<ul style="list-style-type: none"> Development of main research within a university. Placing the focus on an individual institute research interest seems not to be enough 	Doctoral Schools Study

Objectives – 2. Organisation of doctoral education	Reference
<ul style="list-style-type: none"> • Slim, professional and efficient management structure with science background and knowlegde 	<p>Doctoral Schools Study</p>
<ul style="list-style-type: none"> • Achieving critical mass: Doctoral programmes should seek to achieve critical mass and should draw on different types of innovative practice being introduced in universities across Europe, bearing in mind that different solutions may be appropriate to different contexts and in particular across larger and smaller European countries. These range from graduate schools in major universities to international, national and regional collaboration between universities. 	<p>Salzburg "ten basic principles"</p>
<ul style="list-style-type: none"> • In an increasingly competitive national, European and global framework, it is crucial for universities to focus on achieving a critical mass of doctoral candidates, and on building strong research environments in order to enhance research excellence and international collaboration. To achieve critical mass of doctoral candidates, new innovative structures of doctoral programmes such as doctoral! graduate/ research schools need to be developed. In small countries and universities where an adequate critical mass of doctoral candidates cannot be easily achieved, other models may be developed... 	<p>EUA Report 2005</p>
<ul style="list-style-type: none"> • Research program: high scientific quality and originality on international level • Programme Courses: related to the research program with innovative training and supervisory elements 	<p>Doctoral Schools Study</p>
<ul style="list-style-type: none"> • Structure of doctoral studies: Admission criteria, description of the research programm and Programme Courses: (description of courses, type, workload, instruction language, etc..) 	<p>Doctoral Schools Study</p>
<ul style="list-style-type: none"> • Additional courses at an advanced level shall be part of doctoral education. 	<p>ÖRK/bm:bwk</p>
<ul style="list-style-type: none"> • We urge universities to ensure that their doctoral programmes promote interdisciplinary training and the development of transferable skills, thus meeting the needs of the wider employment market. 	<p>Bergen Communiqué</p>
<p>The promotion of innovative structures: to meet the challenge of interdisciplinary and generic skills development training</p>	<p>EUA Report 2005</p>
<ul style="list-style-type: none"> • Training in Core and Transferable Skills Universities are most aware of the fact that in order to prepare young researchers for different positions both within and outside academia, and to meet the increasingly multiple skill demands of the global labour market, they need to offer a wide choice of courses and modules as a part of structured doctoral programmes. 	<p>EUA Report 2005</p>

Objectives – 2. Organisation of doctoral education	Reference
<p>1. Scientific training in core research skills (research methodology and techniques; research management; analysis and diffusion; problem solving; scientific writing and publishing; academic writing in English; awareness of scientific ethics and intellectual property rights; etc.);</p> <p>2. Training in transferable (generic) personal and professional skills and competences (writing and communication skills; networking and team-working; material! human resources and financial management; leadership skills; time management; career management including job-seeking techniques; solving complex problems, quickly extracting and analysing knowledge, networking, , communication, time and project management, risk and failure management, etc.)</p>	
<ul style="list-style-type: none"> Enhancing training in generic skills 	<p>Doctoral Schools Study</p>
<ul style="list-style-type: none"> Teaching In some European countries, teaching is obligatory for doctoral candidates as a part of training in communication and didactical skills. It is important, however, to define an appropriate time limit for teaching duties, and not to use doctoral candidates as a source of cheap labour, a negative tendency which should be avoided. see Good Practices on Doctoral Candidates and Teaching Responsibilities 	<p>EUA Report 2005</p>
<ul style="list-style-type: none"> Collecting teaching experience (teaching a course closely linked to the dissertation subject as well as teaching another course on a somewhat broader subject). 	<p>Doctoral Schools Study</p>
<ul style="list-style-type: none"> Teaching responsibilities should not be excessive and should not prevent researchers, particularly at the beginning of their careers, from carrying out their research activities. 	<p>CC</p>
<ul style="list-style-type: none"> Suitable training should be provided for teaching and coaching activities as part of the professional development of researchers. 	<p>CC</p>
<ul style="list-style-type: none"> Employers and/or funders should ensure that teaching duties are adequately remunerated and taken into account in the evaluation/appraisal systems 	<p>CC</p>

Objectives – 3. Status and funding of doctoral candidate	Reference
<ul style="list-style-type: none"> We consider participants in third cycle programmes both as students and as early stage researchers. 	Bergen Communiqué
<ul style="list-style-type: none"> Doctoral candidates as early stage researchers should be recognised as professionals - with commensurate rights - who make a key contribution to the creation of new knowledge. 	Salzburg "ten basic principles"
<ul style="list-style-type: none"> Recognition of the profession: All researchers engaged in a research career should be recognised as professionals and be treated accordingly. This should commence at the beginning of their careers, namely at postgraduate level, and should include all levels, regardless of their classification at national level (e.g. employee, postgraduate student, doctoral candidate, postdoctoral fellow, civil servants). 	CC
<ul style="list-style-type: none"> The status of doctoral candidates shall be determined by universities as part of their institutional autonomy. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> Doctoral candidates as young professionals should always be included as partners and co researchers in research projects and research groups. 	EUA Report 2005
<ul style="list-style-type: none"> Employers and/or funders of researchers should ensure that researchers enjoy fair and attractive conditions of funding and/or salaries with adequate and equitable social security provisions (including sickness and parental benefits, pension rights and unemployment benefits) in accordance with existing national legislation and with national or sectoral collective bargaining agreements. This must include researchers at all career stages including early-stage researchers, commensurate with their legal status, performance and level of qualifications and/or responsibilities. 	CC
<ul style="list-style-type: none"> Ensuring appropriate funding: the development of quality doctoral programmes and the successful completion by doctoral candidates requires appropriate and sustainable funding. 	Salzburg "ten basic principles"
<ul style="list-style-type: none"> Institutional as well as individual funding shall only be granted on a competitive basis. 	ÖRK/bm:bwk

Objectives – 4. Recruitment practice - Selection of candidates	Reference
<ul style="list-style-type: none"> Employers and/or funders should establish recruitment procedures which are open, efficient, transparent, supportive and internationally comparable, as well as tailored to the type of positions advertised. 	CC
<ul style="list-style-type: none"> Improve the recruitment methods and career evaluation/appraisal systems in order to create a more transparent, open, equal and internationally accepted system of recruitment and career development 	CC
<ul style="list-style-type: none"> Advertisements should give a broad description of knowledge and competencies required, and should not be so specialised as to discourage suitable applicants. Employers should include a description of the working conditions and entitlements, including career development prospects. Moreover, the time allowed between the advertisement of the vacancy or the call for applications and the deadline for reply should be realistic. 	CC
<ul style="list-style-type: none"> Transparency: Candidates should be informed, prior to the selection, about the recruitment process and the selection criteria, the number of available positions and the career development prospects. They should also be informed after the selection process about the strengths and weaknesses of their applications. 	CC
<ul style="list-style-type: none"> Recruitment in Doctoral Programmes: There are several methods for the recruitment of doctoral candidates, mostly based on a competition: <ul style="list-style-type: none"> Entrance examinations and / or an Interview Master degree and good study results (with no entrance exam or interview) - Application and a publication (journal article or conference paper) CV plus defence of the research project proposal 	EUA Report 2005
<ul style="list-style-type: none"> Selection: Selection committees should bring together diverse expertise and competences and should have an adequate gender balance and, where appropriate and feasible, include members from different sectors (public and private) and disciplines, including from other countries and with relevant experience to assess the candidate. Whenever possible, a wide range of selection practices should be used, such as external expert assessment and face-to-face interviews. Members of selection panels should be adequately trained. 	CC
<ul style="list-style-type: none"> Selection of Doctoral Candidates should be transparent, fair and consistent with well defined institutional guidelines and codes of practice. (see Good Practices in Selection Procedures) 	EUA Report 2005

Objectives – 4. Recruitment practice - Selection of candidates	Reference
<ul style="list-style-type: none"> • Selection is usually undertaken by a research/doctoral Committee/Board or by a supervisor or a group of supervisors 	EUA Report 2005
<ul style="list-style-type: none"> • professional recruitment at international level with strict qualitative selection 	Doctoral Schools Study
<ul style="list-style-type: none"> • Candidates either present their own research proposal or it is identified in consultation with the supervisor/s. 	EUA Report 2005
<ul style="list-style-type: none"> • A clear match between the candidate's research project and research experience of the supervisor is crucial. 	EUA Report 2005
<ul style="list-style-type: none"> • The selection of the candidate is based on the candidate's abilities, interest, enthusiasm, the relevance and innovative nature of the research project, and also on adequate funding arrangements 	EUA Report 2005
<ul style="list-style-type: none"> • More university institutions are requiring also a good command of a foreign language from doctoral candidates, most often English as a precondition for mobility and international collaboration requirements in the doctoral programme. Candidates in some countries have also to pass an exam in a foreign language (usually English) as a part of the recruitment process 	EUA Report 2005
<ul style="list-style-type: none"> • Judging merit: The selection process should take into consideration the whole range of experiences of the candidates. While focusing on their overall potential as researchers, their creativity and level of independence should also be considered. 	CC
<ul style="list-style-type: none"> • Variations in the chronological order of CVs: Career breaks or variations in the chronological order of CVs should not be penalised, but regarded as an evolution of a career, and consequently, as a potentially valuable contribution to the professional development of researchers towards a multidimensional career track. Candidates should therefore be allowed to submit evidence-based CVs, reflecting a representative array of achievements and qualifications appropriate to the post for which application is being made. 	CC
<ul style="list-style-type: none"> • Recognition of mobility experience: Any mobility experience, e.g. a stay in another country/region or in another research setting (public or private) or a change from one discipline or sector to another, whether as part of the initial research training or at a later stage of the research career, or virtual mobility experience, should be considered as a valuable contribution to the profession& development of a researcher. 	CC

Objectives – 4. Recruitment practice - Selection of candidates	Reference
<ul style="list-style-type: none"> • Professional qualifications and experience may be also taken into account when selecting the candidates. 	EUA Report 2005
<ul style="list-style-type: none"> • Recognition of qualifications: Employers and/or funders should provide for appropriate assessment and evaluation of the academic and professional qualifications, including nonformal qualifications, of all researchers, in particular within the context of international and professional mobility. They should inform themselves and gain a full understanding of rules, procedures and standards governing the recognition of such qualifications and, consequently, explore existing national law, conventions and specific rules on the recognition of these qualifications through all available channels 	CC
<ul style="list-style-type: none"> • Contract between the Candidate, the Supervisor and the Institution: The recruitment process is completed by preparing and signing a contract between the candidate, the supervisor and the institution in which rights and duties of all parties are clearly defined, and the criteria for assessment and monitoring identified. This practice, used at some universities, provides a sound basis for finding solutions to any problems that may arise during the doctoral studies. see Good Practices in Contracts 	EUA Report 2005
<ul style="list-style-type: none"> • Dissertation agreements may be concluded between doctoral candidates, supervisors and universities. These agreements may, for instance, allow for annual evaluations on a candidate's progress in addition to admission procedures. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • In case of private companies involvement (e.g. co-funding and co-supervision or full funding provided by a private company), it is important to agree on the conditions of research, intellectual property rights and publishing possibilities at the beginning of the doctoral studies in order to ensure that the company's interests will not compromise academic considerations and the company will not prevent a candidate from presenting the results independently. Doctoral programmes involving such co-funding and co supervision should seek to guarantee the independence of the research and the publication of results. 	EUA Report 2005

Objectives – 5. Supervision	Reference
<ul style="list-style-type: none"> • Need for transparent supervision and assessment 	Bergen Communiqué
<ul style="list-style-type: none"> • Relation with supervisors Researchers in their training phase should establish a structured and regular relationship with their supervisor(s) and faculty/department at representative(s) so as to take full advantage of their relationship with them. This includes keeping records of all work progress and research findings, obtaining feedback by means of reports and seminars, applying such feedback and working in accordance with agreed schedules, milestones, deliverables and/or research outputs. 	CC
<ul style="list-style-type: none"> • Employers and/or funders should ensure that a person is clearly identified to whom early-stage researchers can refer for the performance of their professional duties, and should inform the researchers accordingly. Such arrangements should clearly define that the proposed supervisors are sufficiently expert in supervising research, have the time, knowledge, experience, expertise and commitment to be able to offer the research trainee appropriate support and provide for the necessary progress and review procedures, as well as the necessary feedback mechanisms. 	CC
<ul style="list-style-type: none"> • With regard to their role as supervisors or mentors of researchers, senior researchers should build up a constructive and positive relationship with the early-stage researchers, in order to set the conditions for efficient transfer of knowledge and for the further successful development of the researchers' careers. 	CC
<ul style="list-style-type: none"> • Doctoral candidates shall as a rule have their dissertation supervised by a team of scholars. Interdisciplinary, inter-university and international aspects shall be taken into account in the composition of the supervisory teams. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • Single supervision needs to be generally replaced by thesis a committee, which consists at least of two supervisors 	Doctoral Schools Study

Objectives – 6. Qualification requirements, responsibilities and duties of supervisor	Reference
<ul style="list-style-type: none"> Should be clearly defined in institutional regulations at each university and each supervisor should be aware of them. 	EUA Report 2005
<ul style="list-style-type: none"> Supervisors' qualifications should include extensive knowledge and research experience in the broad subject area/field of the doctoral candidates' chosen work, and current involvement in research groups and projects preferably with a European and/or international dimension. 	EUA Report 2005
<ul style="list-style-type: none"> Supervisors need to be fully aware of the skills necessary to facilitate the intellectual and personal development of the candidate, his/her training needs and career development perspectives. To ensure supervisors' abilities to fulfil all these tasks, assessments of supervisors can form a part of the doctoral candidates regular progress plan/report. 	EUA Report 2005
<ul style="list-style-type: none"> To increase the awareness of supervisors' responsibilities, some universities produce handbooks, guidelines and codes for supervisors. See Good Practices on Supervisors' Responsibilities 	EUA Report 2005
<ul style="list-style-type: none"> Supervision and managerial duties Senior researchers should devote particular attention to their multi-faceted role as supervisors, mentors, career advisors, leaders, project coordinators, managers or science communicators. They should perform these tasks to the highest professional standards. 	CC

Objectives – 7. Training and workload of supervisors	Reference
<ul style="list-style-type: none"> • Quality of doctoral training depends highly on supervision. It is, therefore, each university's responsibility to guarantee development of high quality supervision, which is central to the research mission of the university. Universities are most aware of the need to sustain and improve the quality of their supervision. 	EUA Report 2005
<ul style="list-style-type: none"> • Supervisors need be prepared for their roles and further trained in relation to new developments in supervisory practices. Continuous professional development of supervisors needs to be assured as a responsibility of the university • At present, the UK and the Republic of Ireland have national codes of practice in doctoral programmes that involve the obligation of each institution to ensure professional development of supervisors. In addition, government funding for universities in the UK is dependent on training being given to supervisors. Such pressure from funding bodies provides a crucial incentive for universities to introduce training for supervisors and to achieve sustainable quality of supervision. 	EUA Report 2005
<ul style="list-style-type: none"> • A viewpoint expressed (...) suggests that training for supervisors should be a mandatory practice for scholars supervising doctoral candidates. This idea may meet with some resistance from supervisors who prefer traditional ways and attitudes to supervising, but all stakeholders can only benefit from enhanced training: supervisors, candidates and universities. See Good Practices in Training of Supervisors 	EUA Report 2005
<ul style="list-style-type: none"> • Workload of supervisors: Common average is from 4 - 6 candidates. • In many universities doctoral supervision forms part of a "workload model" for academic staff, which ensures that supervisors allocate enough time for each doctoral candidate. 	EUA Report 2005
<ul style="list-style-type: none"> • Employers and/or funders should ensure that time devoted by senior members of staff to the training of early stage researchers should be counted as part of their teaching commitment. 	CC

Objectives – 8. Monitoring and Assessment Procedures of doctoral candidates	Reference
<ul style="list-style-type: none"> • Setting-up of a system providing for regular monitoring and assessment 	EUA Report 2005
<ul style="list-style-type: none"> • Employers and/or funders should introduce for all researchers, including senior researchers, evaluation/appraisal systems for assessing their professional performance on a regular basis and in a transparent manner by an independent (and, in the case of senior researchers, preferably international) committee. 	CC
<ul style="list-style-type: none"> • Such evaluation and appraisal procedures should take due account of their over all research creativity and research results, e.g. publications, patents, management of research, teaching/lecturing, supervision, mentoring, national or international collaboration, administrative duties, public awareness activities and mobility, and should be taken into consideration in the context of career progression. 	CC
<ul style="list-style-type: none"> • Merit should be judged qualitatively as well as quantitatively, focusing on outstanding results within a diversified career path and not only on the number of publications. Consequently, the importance of bibliometric indices should be properly balanced within a wider range of evaluation criteria, such as teaching, supervision, teamwork, knowledge transfer, management of research and innovation and public awareness activities. For candidates from an industrial background, particular attention should be paid to any contributions to patents, development or inventions. 	CC
<ul style="list-style-type: none"> • Employers and/or funders must fully value and acknowledge any mobility experience (of geographical, intersectoral, inter- and trans-disciplinary and virtual mobility as well as mobility between the public and private sector) within their career progression/appraisal system. 	CC
<ul style="list-style-type: none"> • The assessment criteria should be clear and transparent to the candidate and there should be an independent element to the assessment process. 	EUA Report 2005
<ul style="list-style-type: none"> • Usually, monitoring and reviewing of the work plan and timelines for each candidate are carried out every 6 or 12 months by a supervisor and reported to a doctoral / research committee (or an equivalent academic body) in a progress report. 	EUA Report 2005
<ul style="list-style-type: none"> • Regular meetings between the candidate and the supervisor, with records being kept by both 	EUA Report 2005

Objectives – 8. Monitoring and Assessment Procedures of doctoral candidates	Reference
<ul style="list-style-type: none"> • Regular review stages, which include some assessment independent from the supervisor(e.g. review panels); 	EUA Report 2005
<ul style="list-style-type: none"> • Feedback from the candidate on the doctoral programme, training and supervision in forms of assessment and evaluation. 	EUA Report 2005
<ul style="list-style-type: none"> • Student Logs and Websites are considered an effective way of keeping a record of supervisory meetings and the doctoral candidate's progress generally. See Good Practices of Student Logs and Websites 	EUA Report 2005
<ul style="list-style-type: none"> • The crucial role of supervision and assessment: in respect of individual doctoral candidates, arrangements for supervision and assessment should be based on a transparent contractual framework of shared responsibilities between doctoral candidates, supervisors and the institution (and where appropriate including other partners). 	Salzburg "ten basic principles"
<p>Dissertation agreements may be concluded between doctoral candidates, supervisors and universities. These agreements may, for instance, allow for annual evaluations on a candidate's progress (...)</p>	ÖRK/bm:bwk
<ul style="list-style-type: none"> • Contract Between the Candidate, the Supervisor and the Institution (...) in which rights and duties of all parties are clearly defined, and the criteria for assessment and monitoring identified. This practice, used at some universities, provides a sound basis for finding solutions to any problems that may arise during the doctoral studies. see Good Practices in Contracts 	EUA Report 2005

Objectives – 9. Career development and Personal Development Plans (PDP)	Reference
<ul style="list-style-type: none"> • Access to research training and continuous development: Employers and/or funders should ensure that all researchers at any stage of their career, regardless of their contractual situation, are given the opportunity for professional development and for improving their employability through access to measures for the continuing development of skills and competencies. • Such measures should be regularly assessed for their accessibility, take up and effectiveness in improving competencies, skills and employability. 	CC
<ul style="list-style-type: none"> • Access to career advice: Employers and/or funders should ensure that career advice and Job placement assistance, either in the institutions concerned, or through collaboration with other structures, is offered to researchers at all stages of their careers, regardless of their contractual situation. 	CC
<ul style="list-style-type: none"> • The attractiveness of doctoral programmes is highly dependent on the career options offered to graduates, including opportunities for young researchers. This issue requires joint efforts by the universities, the public service and private businesses. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • The PDP specifies the training schedule in terms of both scientific and generic skills based on crucial needs of each candidate. The document is self-reflective, developmental and its "ownership" resides with the doctoral candidate and is a growing practice in many universities (under differing titles and formats). • The Dearing Report 1997 defines PDP as "a structured and supported process undertaken by an individual to reflect upon their own learning, performance and/or achievement and to plan for their personal, educational and career development". 	EUA Report 2005
<ul style="list-style-type: none"> • Career development strategy: Employers and/or funders of researchers should draw up, preferably within the framework of their human resources management, a specific career development strategy for researchers at all stages of their career, regardless of their contractual situation, including for researchers on fixed-term contracts. It should include the availability of mentors involved in providing support and guidance for the personal and professional development of researchers, (...). All researchers should be made familiar with such provisions and arrangements. 	CC
<ul style="list-style-type: none"> • Continuing Professional Development Researchers at all career stages should seek to continually improve themselves by regularly updating and expanding their skills and competencies. This may be achieved by a variety of means including, but not restricted to, formal training, workshops, conferences and e-learning. 	CC

Objectives – 10. Research Environment - Integration of doctoral candidates in Research Groups, Clusters and Networks – critical mass	Reference
<ul style="list-style-type: none"> • Research environment plays an important role in the doctoral candidate's professional and personal development but also in the institutional development of universities. In an increasingly competitive national, European and global framework, it is crucial for universities to focus on achieving a critical mass of doctoral candidates, and on building strong research environments in order to enhance research excellence and international collaboration. 	EUA Report 2005
<ul style="list-style-type: none"> • To achieve critical mass of doctoral candidates, new innovative structures of doctoral programmes such as doctoral/ graduate/ research schools need to be developed (...) High quality research work and training can be acquired through the involvement of active research groups, research clusters and networks (interdisciplinary to inter-institutional and international groupings, clustering of doctoral candidates from several regions or even from neighbouring countries) which stimulates research collaboration at regional, national and international level. 	EUA Report 2005
<ul style="list-style-type: none"> • Doctoral candidates as young professionals should always be included as partners and co researchers in research projects and research groups. It is important to develop protocols within such groups providing a description of the contribution of each member including the doctoral candidates. By integrating doctoral candidates into research groups or clusters in this way they become an integral part of the research community see Good Practices in Integrating Doctoral Candidates into Research Groups 	EUA Report 2005
<ul style="list-style-type: none"> • In cases of doctoral candidate's active participation in research groups, universities need to ensure clear rules on co-authorship in order to protect the intellectual property of the doctoral candidate as well as that of the other members of the research group. 	EUA Report 2005
<ul style="list-style-type: none"> • Doctoral candidates shall be closely involved in research and shall be integrated in the scientific community of their respective disciplines. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • comprehensive Integration in the Research Community 	Doctoral Schools Study
<ul style="list-style-type: none"> • Integration of doctoral candidates in the Scientific Community through academic affiliation (Use of the address, fax number, academic E-Mail address, business card of the institute etc., personal p.o. box at the Institute, Admission into the personnel listings of the Institute, Web space use....) 	„Future DOC“
<ul style="list-style-type: none"> • Development, implementation and promotion of fora for early stage and young researchers in their respective disciplines, for scientific exchange, presentation of research work, Cross-linking etc.. see Austrian best practice examples: 	„Future DOC“

Objectives – 11. Internationalisation/Mobility (geographical, interdisciplinary, inter-sectoral)	Reference
<ul style="list-style-type: none"> • Increasing mobility: Doctoral programmes should seek to offer geographical as well as interdisciplinary and inter-sectoral mobility and international collaboration within an integrated framework of cooperation between universities and other partners. 	Salzburg "ten basic principles"
<ul style="list-style-type: none"> • Value of mobility: Employers and/or funders must recognise the value of geographical, intersectoral, inter- and trans-disciplinary and virtual mobility as well as mobility between the public and private sector as an important means of enhancing scientific knowledge and professional development at any stage of a researcher's career. Consequently, they should build such options into the specific career development strategy and fully value and acknowledge any mobility experience within their career progression/appraisal system. 	CC
<ul style="list-style-type: none"> • Fostering internalisation and mobility (spending time abroad or at a different institution within the country up to 6 months) 	Doctoral Schools Study
<ul style="list-style-type: none"> • Various aspects of doctoral education (organisation of structured programmes, development of joint degrees, supervision by teams, evaluations) call for international cooperation. Efforts in this regard shall therefore be increased. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • Increasing doctoral candidates' international mobility is considered desirable. Mobility shall hence be supported, but should not be made mandatory in general. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • Particular attention shall be paid to the international compatibility of Austrian doctoral programmes and professional licences. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • More university institutions are requiring also a good command of a foreign language from doctoral candidates, most often English as a precondition for mobility and international collaboration requirements in the doctoral programme. Candidates in some countries have also to pass an exam in a foreign language (usually English) as a part of the recruitment process. 	EUA Report 2005
<ul style="list-style-type: none"> • Depending on individual disciplines, there shall be improved offers for foreign language courses at an advanced level (e.g. on writing publications in English). 	ÖRK/bm:bwk
<ul style="list-style-type: none"> • promotion of national and international Cooperation 	Doctoral Schools Study

Objectives – 12. Requirements for the Doctoral Thesis	Reference
<ul style="list-style-type: none"> The doctoral thesis is a core element of the doctorate and a proof of independent research performance and competence of the doctoral candidate. The main quality requirement for any thesis is that it should produce a new insight or knowledge - an innovation in the field, a new scientific method or an application of a known method to a new field. The thesis should present an original piece of research work and place it in the context of the theoretical knowledge and the literature in the field. 	EUA Report 2005
<ul style="list-style-type: none"> The thesis (or at least a part of it) should be publishable in a peer reviewed scientific journal or as a peer reviewed book. At many universities, the defence of the thesis presumes the publication of partial results of the candidate's research. The required number of articles in peer-reviewed journals varies from one to five. 	EUA Report 2005
<ul style="list-style-type: none"> Depending on the discipline, the dissertation thesis may assume different shapes and, for instance, may be replaced by publications in peer-reviewed journals. A university may impose the obligation on doctoral candidates that their dissertations be published. 	ÖRK/bm:bwk
<ul style="list-style-type: none"> Prior to submission of the thesis, doctoral candidates in many countries have to pass examinations in the discipline and sometimes in a foreign language, and/ or a final comprehensive doctoral examination. This is often done at the end of the coursework phase of the studies. 	EUA Report 2005
<ul style="list-style-type: none"> In cases of doctoral candidate's active participation in research groups, universities need to ensure clear rules on co-authorship in order to protect the intellectual property of the doctoral candidate as well as that of the other members of the research group. 	EUA Report 2005
<ul style="list-style-type: none"> The Defence of the Thesis is usually public and the information about it is publicly announced prior to the event (minimum ten days before the event). This practice is common in most European countries, except for the UK where the defence of the thesis is private and it is usually organised as an oral examination (the viva) with one internal and one external examiner. 	EUA Report 2005
<ul style="list-style-type: none"> The thesis is reviewed by two to three reviewers who submit written reviews. The thesis defence committee is composed of internal and external professors and experts in the field including the reviewers. (..) It is suggested that at least one member of the committee comes from abroad to ensure an assessment at an international level. Such a practice, although it poses additional financial costs, could contribute to improving quality standards of the doctorate across European countries. 	EUA Report 2005

Objectives – 12. Requirements for the Doctoral Thesis	Reference
<ul style="list-style-type: none">The defence itself consists of the candidate's presentation of main points of his/her research work and thesis, followed by an open discussion between the defence committee and the candidate. The decision is made by the committee in a secret ballot and announced to the audience. See Good Practices in Thesis Defence	EUA Report 2005

Objectives – 13. Follow-up and Tracking of PhD Graduates	Reference
<ul style="list-style-type: none">In order to evaluate the value and efficiency of innovation and reform in doctoral programmes and to provide evidence of the ways in which doctoral candidates use their acquired skills, it will be crucial to track doctoral candidates' subsequent careers. (...) this seems to be an area where more work needs to be done. See Good Practices examples on Tracking	EUA Report 2005
<ul style="list-style-type: none">Universities have a particular responsibility in establishing sound practices and information bases to collect and up-date data through surveys and other "tracking" instruments utilising ICT facilities (systematic collection and analysis of "key indicator" data such as data on completion rates and career outcomes)	EUA Report 2005