Indicator book; Ranking indicators

Contents

Institutional ranking

Teaching & Learning

Bachelor graduation rate	
Level	Institutional Ranking
Dimension	Teaching & Learning
Definition	The percentage of new entrants that successfully completed their bachelor program.
Rationale	The graduation rate shows how well the university's programmes are organised and reflects the effectiveness of its teaching.
Data source	institution questionnaire
Data elements	Number of bachelor degrees awarded Number of new entrants in bachelor programmes
Time reference	latest three years
Formula	$\frac{\sum_{i=0}^{2} Graduates\ BA_{t-i}}{\sum_{i=0}^{2} New\ entrants\ BA_{t-x-i}} * 100$ T=standard reference year (2013) X=standard length of BA programme

Master graduation rate	
Level	Institutional Ranking
Dimension	Teaching & Learning
Definition	The percentage of new entrants that successfully completed their master program.
Rationale	The graduation rate shows how well the university's programmes are organised and reflects the effectiveness of its teaching.
Data source	institution questionnaire
Data elements	Number of master degrees (in period T) Number of new entrants in master programmes (in period T-x, x being the standard length of master programmes in years).
Time reference	latest three years
Formula	$\frac{\sum_{i=0}^{2} Graduates\ MA_{t-i}}{\sum_{i=0}^{2} New\ entrants\ MA_{t-x-i}} * 100$ T=standard reference year (2013) X=standard length of MA programme

Graduating on time (Bachelors)	
Level	Institutional Ranking
Dimension	Teaching & Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their bachelor programme.
Rationale	The time to degree reflects how well the university's programmes are organised and shows the effectiveness of its teaching.
Data source	institution questionnaire
Data elements	Number of graduates that graduated within the time expected for their bachelor programme Number of bachelor graduates.
Time reference	latest year
Formula	$\frac{graduates\ BA\ within\ normative\ time_t}{graduates\ BA\ total_t} * 100$ T=standard reference year (2013)

Graduating on time (Masters)	
Level	Institutional Ranking
Dimension	Teaching & Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their masters programme.
Rationale	The time to degree reflects how well the university's programmes are organised and shows the effectiveness of its teaching.
Data source	institution questionnaire
Data elements	Number of graduates that graduated within the time expected for their masters programme Number of master graduates.
Time reference	latest year
Formula	$\frac{graduates\ MA\ within\ normative\ time_t}{graduates\ MA\ total_t} * 100$ T=standard reference year (2013)

Research

Art related output	
Level	Institutional Ranking
Dimension	Research
Definition	The number of scholarly outputs in the creative and performing arts, relative to the full-time equivalent (fte) number of academic staff.
Rationale	This measure recognises outputs other than research publications and reflects all tangible research-based outputs such as musical compositions, designs, artifacts, software, et cetera.
Data source	institution survey
Data elements	Number of art related outputs (concerts, exhibitions, artefacts, media productions) academic staff (fte)
Time reference	latest three years
Formula	$\frac{Average\ of\ number\ of\ art\ related\ outputs\ \ ^{2011-2013}}{FTE\ academic\ staff_t} * 100$ T=standard reference year (2013)

Citation rate	
Level	Institutional Ranking
Dimension	Research
Definition	The average number of times that the university's research publications (over the period 2009-2012) get cited in other research, adjusted (normalized) at the global level to take into account differences in publication years and to allow for differences in citation customs across academic fields (‘mean normalised citation rate’, MNCS).
Rationale	Indicator of the scientific impact of research outputs within international scientific communities. The measure takes into account differences in citation customs across academic fields ('normalisation').
Data source	CWTS/Web of Science
Data elements	Mean Normalised Citation Rate
Time reference	period 2009 through 2012
Formula	

External research income	
Level	Institutional Ranking
Dimension	Research
Definition	Revenue for research that is not part of a core (or base) grant received from the government. Includes research grants from national and international funding agencies, research councils, research foundations, charities and other non-profit organizations. Measured in € 1,000s, using Purchasing Power Parities (PPP). Expressed per fte academic staff.
Rationale	The indicator expresses the institution's success in attracting grants in national and international competitive, peer reviewed programmes. This reflects the quality of an institution's research.
Data source	institution survey
Data elements	Revenue for research that is not part of a core (or base) grant received from the government. Includes research grants from national and international funding agencies, research councils, research foundations, charities and other non-profit organizations PPP (GDP) in euros academic staff (fte)
Time reference	latest year
Formula	*(Research revenues from research grants from national and international funding agencies, research councils, research foundations, charities and other non-profit organizations)/PPP (GDP) in euros/fte academic staff*

Income from private sources	
Level	Institutional Ranking
Dimension	Research
Definition	Research revenues and knowledge transfer revenues from private sources (incl. not-for profit organisations), excluding tuition fees. Measured in €1,000s using Purchasing Power Parities. Expressed per fte academic staff.
Rationale	The degree to which research is funded by external, private organisations reflects aspects of its research quality - most notably its success in attracting funding and research contracts from end-user sources.
Data source	institution questionnaire
Data elements	Revenues of research related contracts and services, consultancies and other project funds from industry/private business; research related revenues from charities, private foundations, trusts and other non-profit organisations; revenues from licensing PPP (GDP) in euros academic staff (fte)
Time reference	latest year
Formula	*(Revenues of research related contracts and services, consultancies and other project funds from industry/private business; research related revenues from charities, private foundations, trusts and other non-profit organisations; revenues from licensing)/ PPP (GDP) in euros/fte academic staff.*

Interdisciplinary publications	
Level	Institutional Ranking
Dimension	Research
Definition	The extent to which reference lists of publications reflect citations to publications from other scientific disciplines.
Rationale	The more a publication refers to publications belonging to different fields of science and the larger the distance between these fields, the higher the degree of interdisciplinarity. Given that the frontiers of research are often at the edge of disciplines, the multidisciplinarity of research reflects its innovative character.
Data source	CWTS/Web of Science
Data elements	Interdisciplinary scientific publication output Total publication output
Time reference	period 2009 through 2012
Formula	$\frac{score\ on\ interdisciplinarity}{total\ publication\ output} * 100$

Post-doc positions	
Level	Institutional Ranking
Dimension	Research
Definition	The number of post-doc positions relative to the number of academic staff.
Rationale	As post doc positions are often externally (and competitively) funded, an institution with more post-doc positions is more likely to have a higher research quality.
Data source	institution questionnaire
Data elements	Post doc positions (headcount) Academic staff (headcount)
Time reference	latest year
Formula	$\frac{Number\ of\ postdoc\ positions}{fte\ academic\ staff} * 100$

Research publications (absolute numbers)	
Level	Institutional Ranking
Dimension	Research
Definition	The number of research publications (indexed in the Web of Science database), where at least one author is affiliated to the university.
Rationale	The number of publications in academic journals is a measure of the institution's research activity and its capability in producing research publications at the international level.
Data source	CWTS/Web of Science
Data elements	number of research publications
Time reference	period 2009 through 2012

Research publications (size normalised)	
Level	Institutional Ranking
Dimension	Research
Definition	The number of research publications (indexed in the Web of Science database), where at least one author is affiliated to the university (relative to the number of students).
Rationale	The number of publications in academic journals is a measure of the institution's research activity and its capability in producing research publications at the international level. Correcting for the size of the institution (approximated by student enrollments) enables a more fair comparison to other institutions.
Data source	CWTS/Web of Science
Data elements	number of research publications number of students enrolled
Time reference	period 2009 through 2012
Formula	$\frac{total\ number\ of\ research\ publications_{2009-2012}}{total\ number\ of\ students\ enrolled_{2013}}$

Top cited publications

Level	Institutional Ranking
Dimension	Research
Definition	The proportion of the university's research publications that, compared to other publications in the same field and in the same year, belong to the top 10% most frequently cited.
Rationale	This is a measure of international research excellence. Departments with well over 10% of their publications in the top percentile of frequently cited articles worldwide are among the top research institutes worldwide.
Data source	CWTS/Web of Science
Data elements	The number of publications of a university that, compared with other publications in the same field and in the same year, belong to the top 10% most frequently cited. total publication output
Time reference	period 2009 through 2012
Formula	$\frac{score\ on\ top\ cited\ publications}{total\ publication\ output} * 100$

Knowledge Transfer

Co-publications with industrial partners	
Level	Institutional Ranking
Dimension	Knowledge Transfer
Definition	The percentage of all the university's research publications that list an author affiliate with an address that refers to a business enterprise or a private sector R&D unit.
Rationale	The more research is carried out with external partners the more likely it is that knowledge transfer takes place between academia and business.
Data source	CWTS/Web of Science
Data elements	The number ofall the university's research publications that list an author affiliate with an address that refers to a business enterprise or a private sector R&D unit. Total publication output
Time reference	period 2009 through 2012
Formula	$\frac{score\ on\ co-publications\ with\ industry}{total\ publication\ output} * 100$

Income from continuous professional development	
Level	Institutional Ranking
Dimension	Knowledge Transfer
Definition	The percentage of the university's total revenues that is generated from activities delivering Continuous Professional Development (CPD) courses and training.
Rationale	When a university is very active in providing continuing education courses to companies and private individuals it transfers knowledge to its environment.
Data source	institution questionnaire
Data elements	Total income Income from CPD
Time reference	latest year
Formula	$\frac{income\ from\ CPD_{2013}}{total\ income_{2013}} * 100$

Industry co-patents	
Level	Institutional Ranking
Dimension	Knowledge Transfer
Definition	The percentage of the university's patent applications where at least one of the co-applicants is a private company.
Rationale	If the university applies for a patent with a private firm this reflects that it shares its knowledge with external partners and shows the extent to which it is willing to share its technological inventions for further commercial development.
Data source	Patstat database
Data elements	Patents Co-patents with industry
Time reference	period 2002-2011
Formula	$\frac{number\ of\ co-patents\ with\ industry_{\ 2002-2011}}{total\ number\ of\ patents_{2002-2011}} * 100$

Patents awarded (absolute numbers)	
Level	Institutional Ranking
Dimension	Knowledge Transfer
Definition	The number of patents assigned to (inventors working in) the university (over the period 2002-2011).
Rationale	The number of patents is an established measure of technology transfer as it indicates the degree to which discoveries and inventions made in academic institutions may be transferred to economic actors for further industrial / commercial development.
Data source	PATSTAT database
Data elements	counts on the level of patent families
Time reference	period 2002-2011

Patents awarded (size-normalised)	
Level	Institutional Ranking
Dimension	Knowledge Transfer
Definition	The number of patents assigned to (inventors working in) the university over the period 2002-2011 (per 1,000 students).
Rationale	The number of patents is an established measure of technology transfer as it indicates the degree to which discoveries and inventions made in academic institutions may be transferred to economic actors for further industrial / commercial development. Correcting for the size of the institution (approximated by student enrollments) enables a more fair comparison to other institutions.
Data source	PATSTAT database
Data elements	The number of patents assigned to (inventors working in) the institution Total number of students enrolled
Time reference	period 2002-2011
Formula	$\frac{number\ of\ patents\ assigned\ to\ the\ institution_{\ 2002-2011}}{total\ number\ of\ students\ enrolled_{2013}} * 100$

Publications cited in patents

Level	Institutional Ranking
Dimension	Knowledge Transfer
Definition	The percentage of the university's research publications that were mentioned in the reference list of at least one international patent (as included in the PATSTAT database).
Rationale	This indicator reflects the technological relevance of scientific research at the university, in the sense that it explicitly contributed, in some way, to the development of patented technologies.
Data source	CWTS/Web of Science
Data elements	Research publications Publications cited in patents
Time reference	period 2009 through 2012
Formula	$\frac{score\ on\ publications\ cited\ in\ patents}{total\ publication\ output} * 100$

Spin-offs	
Level	Institutional Ranking
Dimension	Knowledge Transfer
Definition	The number of spin-offs (i.e. firms established on the basis of a formal knowledge transfer arrangement between the institution and the firm) recently created by the institution (per 1000 fte academic staff)
Rationale	A new firm that is based on knowledge created in a university signals a successful case of knowledge transfer from academia to industry.
Data source	institution questionnaire
Data elements	Start-up firms Academic staff (fte)
Time reference	latest three years
Formula	$\frac{average\ number\ of\ start{-}up\ firms_{2011-2013}}{fte\ academic\ staff_{2013}}$

International orientation

Foreign language bachelor programmes	
Level	Institutional Ranking
Dimension	International Orientation
Definition	The percentage of bachelor programmes that are offered in a foreign language.
Rationale	Offering degree programmes in a foreign langauge signals the commitment of the university to welcome foreign students and to prepare its students for working in an international environment.
Data source	institution questionnaire
Data elements	Bachelor programmes in foreign language Bachelor programmes
Time reference	latest year
Formula	$\frac{number\ of\ BA\ programmes\ offered\ in\ a\ foreign\ language_{2013}}{total\ number\ of\ BA\ programmes\ offered_{2013}}$

Foreign language master programmes	
Level	Institutional Ranking
Dimension	International Orientation
Definition	The percentage of masters programmes that are offered in a foreign language.
Rationale	Offering masters programmes in a foreign language testifies the commitment of the university to welcome foreign students and to prepare its students for working in an international environment.
Data source	institution questionnaire
Data elements	Master programmes in foreign language Master programmes offered
Time reference	latest year
Formula	$\frac{number\ of\ MA\ programmes\ offered\ in\ a\ foreign\ language_{2013}}{total\ number\ of\ MA\ programmes\ offered_{2013}}$

International academic staff	
Level	Institutional Ranking
Dimension	International Orientation
Definition	The percentage of academic staff (on a headcount basis) with foreign citizenship.
Rationale	Having an international academic staff reflects the international orientation of the university and its attractiveness as an employer for foreign academics.
Data source	institution questionnaire
Data elements	Academic staff (headcount; excluding doctorate candidates counted as staff) International academic staff (headcount; excluding doctorate candidates counted as staff)
Time reference	latest three years
Formula	$\frac{academic\ staff\ with\ foreign\ nationality\ (headcount)_t}{academic\ staff\ (headcount)_t} * 100$ T=standard reference year (2013)

International doctorate degrees	
Level	Institutional Ranking
Dimension	International Orientation
Definition	The percentage of doctorate degrees that are awarded to international doctorate candidates.
Rationale	The number of doctorate degrees awarded to international candidates reflects the international orientation of an institution.
Data source	institution questionnaire
Data elements	Foreign doctorate degrees Doctorate degrees awarded
Time reference	latest three years
Formula	$\frac{\sum_{i=0}^{2} Graduates\ doctorate\ degree\ with\ foreign\ nationality_{t-i}}{\sum_{i=0}^{2} Graduates\ doctorate\ degree\ total_{t-i}} * 100$ T=standard reference year (2013)

International joint publications	
Level	Institutional Ranking
Dimension	International Orientation
Definition	The percentage of the university's research publications that list at least one affiliate author's address in another country.
Rationale	The number of international joint publications reflects the degree to which a university's research is connected to international networks.
Data source	CWTS/Web of Science
Data elements	International joint research publications Research publications
Time reference	period 2009 through 2012
Formula	$\frac{score\ on\ international\ co-publications}{total\ publication\ output} * 100$

Student mobility	
Level	Institutional Ranking
Dimension	International Orientation
Definition	A composite of international incoming exchange students, outgoing exchange students and students in international joint degree programmes.
Rationale	Having an international student body and offering students the opportunity to do part of their degree abroad signals the international orientation of the university.
Data source	institution questionnaire
Data elements	Incoming students; Students sent out in international exchange programmes; students in joint degree programmes Total enrolment
Time reference	latest year
Formula	*This indicator consists of three subindicators: the percentage incoming exchange students, the percentage exchange students sent out and the percentage of students in international joint degree programmes.* *Since the ranges of scores on these indicators differ the scores are normalised (z-scores). The composite indicator value is calculated as the mean of the normalised scores on the three subindicators. If a score on one or two subindicators is missing, the score is based on two or one subindicator.* *The resulting composite indicator has a range between -0,8 and 5,3. To create a score that is between 0 and 1 the scores are rescaled. For this rescaling the formula (x_i-min)/(max-min) is used.* [1]

[1] *Michela Nardo, Michaela Saisana, Andrea Saltelli & Stefano Tarantola(2005)* Tools for Composite Indicators Building, http://farmweb.jrc.cec.eu.int/ci/bibliography.htm

Regional Engagement

Bachelor graduates working in the region	
Level	Institutional Ranking
Dimension	Regional Engagement
Definition	The percentage of bachelor graduates who found their first job (after graduation) in the region where the university is located.
Rationale	If a relatively large number of an institution's graduates is working in the region this reflects strong linkages between the university and its regional partners.
Data source	institution questionnaire
Data elements	Proportion (or range) indicated.
Time reference	latest year
Formula	

Income from regional sources	
Level	Institutional Ranking
Dimension	Regional Engagement
Definition	The proportion of income – apart from government or local authority core/recurrent grants – that comes from regional sources (i.e. industry, private organisations, charities).
Rationale	A high proportion of income from regional/local sources indicates a more intense relationship between the university and the region.
Data source	institution questionnaire
Data elements	Proportion (or range) indicated.
Time reference	latest year
Formula	

Master graduates working in the region	
Level	Institutional Ranking
Dimension	Regional Engagement
Definition	The percentage of masters graduates who found their first job (after graduation) in the region where the university is located.
Rationale	If a relatively large number of an institution's graduates is working in the region this reflects strong linkages between the university and its regional partners.
Data source	institution questionnaire
Data elements	Proportion (or range) indicated
Time reference	latest year
Formula	

Regional joint publications

Level	Institutional Ranking
Dimension	Regional Engagement
Definition	The percentage of the university's research publications that list at least one co-author with an affiliate address in the same region (within a distance of 50 km).
Rationale	Co-publications with authors located elswhere in the institution's geographical region are a reflection of regional linkages between the university and regional partners.
Data source	CWTS/Web of Science
Data elements	Number of research publications that list at least one affiliate address of co-authors in the same 'region' (50 km range) Total publication output
Time reference	period 2009 through 2012
Formula	$\frac{score\ on\ regional\ co-publications}{total\ publication\ output} * 100$

Student internships in the region	
Level	Institutional Ranking
Dimension	Regional Engagement
Definition	Out of all the university's students who did an internship, the percentage where the internship was with a company or organisation located in the region.
Rationale	Internships of students in regional enterprises are a means to build co-operations with regional partners and connect students to the local labour market.
Data source	institution questionnaire
Data elements	Internships in local enterprises Internships
Time reference	latest year
Formula	$\frac{Students\ in\ intership\ in\ the\ region_t}{Students\ in\ internships_t} * 100$ T=standard reference year (2013)

Field based ranking

Teaching & Learning

Academic staff with doctorates	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	The percentage of academic staff holding a doctorate (PhD or equivalent).
Rationale	Highly qualified academic staff is a precondition for high quality education/programmes. In an international perspective it can be measured and compared by reference to the percentage of staff which holds a PhD. A PhD may be seen as a minimum qualification for independent scientific work.
Data source	Department questionnaire
Data elements	Academic staff (headcount) with a completed PhD (or equivalent) Number of academic staff (head count)
Time reference	Latest academic year
Formula	$\frac{(\text{Prof. with completed PhD} + \text{Academic staff with completed phd}) * 100}{(\text{Head count prof.} + \text{Head count acadademic staff})}$

Contact with teachers	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of the feedback given by teachers, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including commitment of teaching staff to students, availability of teachers/professors, informal advice and coaching, feedback on homework, assignments and examinations.
Time reference	Current sample of students

Contact with work environment (bachelors)	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	A composite measure representing at bachelor level: (1) the inclusion of internships or phases of practical experience in the curriculum; and (2) the percentage of students doing an internship; and (3) teaching by practitioners from outside the university departments.
Rationale	The inclusion of work experience and contacts to the work environment is an important factor to enhance the employability of students.
Data source	Department questionnaire
Data elements	Inclusion of internships / phases of practical experience in degree programes Percentage of students doing an internship Percentage of courses delivered by practitioners from outside higher education
Time reference	Current academic year

Contact with work environment (masters)	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	A composite measure representing at bachelor level: (1) the inclusion of internships/phases in work; and (2) the precentage of students doing an internship; and (3) teaching by practitioners from outside university departments.
Rationale	Including work experience for students into the programme is an important aspect of enhancing employability.
Data source	Department questionnaire
Data elements	Inclusion of internships / phases of practical experience in degree programes Percentage of students doing an internship Percentage of courses delivered by practitioners from outside higher education
Time reference	Current academic year

Graduating on time (bachelors)	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their bachelor programme.
Rationale	A well organised degree programme should allow students to graduate within the expected time.
Data source	Department questionnaire
Data elements	Number of graduates Number of graduates graduating on time
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Graduates\ BA\ on\ time_i * 100}{\sum_{i=1}^{n} Graduates\ BA\ total_i}$

Graduating on time (masters)	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	The percentage of graduates that graduated within the time expected (normative time) for their masters programme.
Rationale	A well organised degree programme should allow students to graduate within the expected time.
Data source	Department questionnaire
Data elements	Number of graduates Number of graduates graduating on time
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Graduates\ MA\ in\ time_i * 100}{\sum_{i=1}^{n} Graduates\ MA\ total_i}$

Inclusion of work/practical experience	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of the inclusion of work experience and of elements related to work practice, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including opportunities of including a practical work period/an internship, information about relevant professional fields, number of courses related to practice/work.
Time reference	Current sample of students

IT provision	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	Student assessment of the quality of IT services for students, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including hardware and software available, maintenance of the computers, user support, number of available work places
Time reference	Current sample of students

Laboratory facilities	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of the quality of laboratories available to students, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including maintenance of laboratoires, technical facilities, number of places available.
Time reference	Current sample of students

Library facilities	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of the quality of library services for students, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including availability of literature needed for your work, access to on-stock books and academic journals, access to electronic journals, user support, availability of study/reading places, open hours.
Time reference	Current sample of students

Organisation of programme	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of the organisation of the programme, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including transparency of entrance requirements/admission regulations, access to classes, average class size, completeness of courses offered compared to the study guide, transparency of the examination system.
Time reference	Current sample of students

Overall learning experience	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of the quality of the overall learning experience, based on a survey of the students.
Rationale	
Data source	Student survey
Data elements	Overall learning experience
Time reference	Current sample of students

Quality of courses & teaching	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of the quality of teaching provision, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including the breadth of teaching offerings, the quality of basic courses, didactic quality of teaching, interdisciplinary elements, options to chose elective courses, laboratoy courses (engineering only).
Time reference	Current sample of students

Room facilities	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	An assessment of lecture halls and seminar rooms, based on a student satisfaction survey.
Rationale	
Data source	Student survey
Data elements	Several items in the questionnaire including maintenance, technical facilities, number of places available with regard to class size.
Time reference	Current sample of students

Student-staff ratio	
Level	Field Based Ranking
Dimension	Teaching & Learning
Definition	The number of students (headcount) per member of the academic staff (heacount).
Rationale	Indicator for the (expected) intensity of mentoring/tutoring and of contact between students and teachers.
Data source	department questionnaire
Data elements	Number of students (head count) Number of academic staff (head count)
Time reference	Latest academic year
Formula	$\frac{\text{Students major} + (\text{Students minor} * 0.5)}{\text{Head count professors} + \text{Head count acadademic staff}}$

Research

Citation rate	
Level	Field Based Ranking
Dimension	Research
Definition	The average number of times that the university department's research publications (over the period 2009-2012) get cited in other research, adjusted (normalized) at the global level for the field of science and the year in which a publication appeared (‘mean normalised citation rate’).
Rationale	Indicator of the scientific impact of research outputs within international scientific communities. The measure takes into account differences in citation customs across academic fields ('normalisation').
Data source	CWTS/Web of Science
Data elements	MNCS
Time reference	Period 2009 through 2013

Doctorate productivity	
Level	Field Based Ranking
Dimension	Research
Definition	The number of doctorate degrees, relative to the number of academic staff (fte)
Rationale	The number of doctorate degrees may be seen as an expression of the research activity of a higher education institution. The doctorate thesis is a significant research publication.
Data source	Department questionnaire
Data elements	Number of doctorate degrees awarded Full time equivalent (fte) number of academic staff
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Doctorate\ degrees_i}{\sum_{i=1}^{n} fte\ professors_i + \sum_{i=1}^{n} fte\ academic\ staff_i}$

External research income	
Level	Field Based Ranking
Dimension	Research
Definition	Research revenue that is not part of a core (or base) grant received from the government. Includes research grants from national and international funding agencies, research councils, research foundations, charities and other non-profit organisations. Measured in €1,000s using Purchasing Power Parities (PPP). Expressed per fte academic staff.
Rationale	The indicator expresses the department's success in attracting grants in national and international competitive, peer reviewed programmes. This reflects the quality of its research.
Data source	Department questionnaire
Data elements	Research income from national and international funding agencies, research councils, research foundations, charities and other non-profit organisations Full time equivalent (fte) number of academic staff
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Research\ income_i - \sum_{i=1}^{n} Research\ income\ for\ professorships_i}{\sum_{i=1}^{n} fte\ professors_i + \sum_{i=1}^{n} fte\ academic\ staff_i}$ *(normalized by Purchasing Power Parity (PPP) and recalculated in Euro)*

Interdisciplinary publications	
Level	Field Based Ranking
Dimension	Research
Definition	The extent to which reference lists of publications reflect citations to publications from other scientific disciplines.
Rationale	The more a publication refers to publications belonging to different fields of science and the larger the distance between these fields, the higher the degree of interdisciplinarity. Given that the frontiers of research are often at the edge of disciplines, the multidisciplinarity of research reflects its innovative character.
Data source	CWTS/Web of Science
Data elements	Interdisciplinary scientific publication output Total publication output
Time reference	Period 2009 through 2012
Formula	$\frac{Interdisciplinary\ academic\ publication\ * 100}{Total\ number\ of\ academic\ publications}$

Post-doc positions	
Level	Field Based Ranking
Dimension	Research
Definition	The number of post-doc positions relative to the number of academic staff.
Rationale	As post doc positions are often externally (and competitively) funded, an institution with more post-doc positions is more likely to have a higher research quality.
Data source	Department questionnaire
Data elements	Number of post-doc positions (headcount) Full-time equivalent (fte) number of academic staff
Time reference	Post-doc positions: latest academic year Academic staff: three years average
Formula	$\frac{Number\ of\ post-doc\ positions\ 2013/14}{\frac{\sum_{i=1}^{n} fte\ professors_i}{n} + \frac{\sum_{i=1}^{n} fte\ academic\ staff_i}{n}}$

Research orientation of teaching	
Level	Field Based Ranking
Dimension	Research
Definition	The degree to which the education is informed by research in the field (based on a survey of students in the programme).
Rationale	The degree to which education is informed by research reflects the innovative character of the teaching in the programme.
Data source	Student survey
Data elements	
Time reference	Current sample of students

Research publications (absolute numbers)	
Level	Field Based Ranking
Dimension	Research
Definition	The number of research publications indexed in the Web of Science database, where at least one author is affiliated to the university.
Rationale	The number of publications in academic journals is a measure of the institution's research activity and its capability in producing research publications at the international level.
Data source	CWTS/Web of Science
Data elements	Research publications
Time reference	Period 2009 through 2012

Top cited publications

Level	Field Based Ranking
Dimension	Research
Definition	The proportion of the department's research publications that, compared to other publications in the same field and in the same year, belong to the top 10% most frequently cited.
Rationale	This is a measure of international research excellence. Departments with well over 10% of their publications in the top percentile of frequently cited articles worldwide are among the top research institutes worldwide.
Data source	CWTS/Web of Science
Data elements	The number of publications of a university that, compared with other publications in the same field and in the same year, belong to the top 10% most frequently cited Total publication output
Time reference	Period 2009 through 2012

Knowledge Transfer

Co-publications with industrial partners	
Level	Field Based Ranking
Dimension	Knowledge Transfer
Definition	The percenatge of the department's research publications that list a author address referring to a business enterprise or a private sector R&D unit.
Rationale	The more research is carried out with external partners the more likely it is that knowledge transfer takes place between academia and business.
Data source	CWTS/Web of Science
Data elements	Number of the institution's research publications that list an author address referring to a business enterprise or private sector R&D Total number of research publications
Time reference	Period 2009 through 2012
Formula	$\frac{Joint\ academic\ publication\ with\ industry\ * 100}{Total\ number\ of\ academic\ publications}$

Income from private sources	
Level	Field Based Ranking
Dimension	Knowledge Transfer
Definition	Research revenues from private sources as a share of total external research income
Rationale	The degree to which research is funded by external, private organisations reflects aspects of a department's research quality - most notably its success in attracting funding and research contracts from end-user sources.
Data source	department questionnaire
Data elements	Income from industry/private business Total third party funds
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Income\ from\ private\ business_i * 100}{\sum_{i=1}^{n} Total\ third\ party\ funds_i}$

Patents awarded (absolute numbers)	
Level	Field Based Ranking
Dimension	Knowledge Transfer
Definition	The number of patents assigned to (inventors working in) the university over the period 2002-2011.
Rationale	The number of patents is an established measure of technology transfer as it indicates the degree to which discoveries and inventions made in academic institutions may be transferred to economic actors for further industrial / commercial development.
Data source	Patstat data bases
Data elements	Counts on the level of patent families
Time reference	Period 2002-2011

Publications cited in patents

Level	Field Based Ranking
Dimension	Knowledge Transfer
Definition	The percentage of the department's research publications that were cited in the reference list of at least one international patent (as included in the PATSTAT database).
Rationale	This indicator reflects the technological relevance of the department's scientific research, in the sense that it explicitly contributed, in some way, to the development of patented technologies.
Data source	CWTS/Web of Science
Data elements	Publications cited in patents Research publications
Time reference	Period 2009 through 2012
Formula	$\frac{Patent\ citations\ to\ research\ publications * 100}{Total\ number\ of\ academic\ publications}$

International orientation

International doctorate degrees	
Level	Field Based Ranking
Dimension	International Orientation
Definition	The percentage of doctorate degrees that are awarded to international doctorate candidates.
Rationale	The international orientation of an institution is reflected in the number of doctorate degrees awarded to international candidates.
Data source	Department survey
Data elementss	Number of doctorate degrees awarded to international doctorate candiadates (citizenship) Total number of PhDs awarded
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} PhDs\ by\ international\ students_i * 100}{\sum_{i=1}^{n} Total\ PhDs_i}$

International joint publications	
Level	Field Based Ranking
Dimension	International Orientation
Definition	The percentage of research publications that list at least one affiliate author's address in another country.
Rationale	The number of international joint publications reflects the degree to which a university's research is connected to international networks.
Data source	CWTS/Web of Science
Data elementss	Number of research publications that list at least one affiliate author's address from another country Total number of academic publications
Time reference	Period 2009 through 2012
Formula	$\frac{International\ joint\ publications * 100}{Total\ number\ of\ academic\ publications}$

International orientation of bachelor programmes	
Level	Field Based Ranking
Dimension	International Orientation
Definition	A composite measure taking into account (1) the existence of joint/dual degree programmes; (2) the inclusion of study periods abroad; (3) the percentage of international (degree and exchange) students; and (4) the percentage of international academic staff.
Rationale	The integration of international learning experiences and learning with international students and teachers are central elements of the internationalisation of teaching & learning.
Data source	Department survey
Data elements	Existence of joint degree programmes / stay abroad Percentage of international students Percentage of incoming exchange students Percentage of international academic staff
Time reference	Current academic year

International orientation of master programmes	
Level	Field Based Ranking
Dimension	International Orientation
Definition	A composite measure taking into account (1) the existence of joint/dual degree programmes; (2) the inclusion of study periods abroad; (3) the percentage of international (degree and exchange) students; and (4) the percentage of international academic staff.
Rationale	The integration of international learning experiences and learning with international students and teachers are central elements of the internationalisation of teaching & learning.
Data source	Department survey
Data elements	Existence of joint degree programmes / stay abroad Percentage of international students Percentage of incoming exchange students Percentage of international academic staff
Time reference	Current academic year

International research grants	
Level	Field Based Ranking
Dimension	International Orientation
Definition	The proportion of external research revenue – including public and private funding organisations and businesses – that comes from other countries.
Rationale	The existence of research projects that are funded by foreign and international souces is a good indicator of the international orientation of research activities.
Data source	Department survey
Data elements	Research revenues from international sources (public and private funding organisations and firms from abroad) Total external research income
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Research\ funds\ international\ sources_i * 100}{\sum_{i=1}^{n} Total\ external\ research\ income_i}$

Opportunities to study abroad	
Level	Field Based Ranking
Dimension	International Orientation
Definition	An assessment of the opportunities for studying abroad, based on a survey of the students.
Rationale	Students' judgments about their possibilities and the support by their university to arrange a semester or an internship abroad.
Data source	Student survey
Data elements	Several items in the questionnaire including attractiveness of the exchange programme/partner universities, support and advice for studying abroad, financial support, recognition of the results obtained during the study abroad period (e.g. Credits).
Time reference	Current sample of students

Regional Engagement

Income from regional sources	
Level	Field Based Ranking
Dimension	Regional Engagement
Definition	The proportion of income – apart from government or local authority core/recurrent grants – that comes from regional sources (i.e. industry, private organisations, charities).
Rationale	A high proportion of income from regional/local sources indicates a more intense relationship between the university and the region.
Data source	Department survey
Data elements	Income from regional sources Total income
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Income\ from\ regional\ sources_i * 100}{\sum_{i=1}^{n} Total\ income_i}$

Regional joint publications

Level	Field Based Ranking
Dimension	Regional Engagement
Definition	The percentage of research publications that list at least one co-author with an affiliate address in the same "region" (within a distance of 50 km from the university).
Rationale	Co-publications with authors located elswhere in the region are a reflection of regional linkages between the university and regional partners.
Data source	CWTS/Web of Science
Data elements	Number of research publications that list at least one affiliate address of co-authors in the same region Total number of academic publications
Time reference	Period 2009 through 2012
Formula	$\frac{Joint\ regional\ publications\ \ in\ period * 100}{Total\ number\ of\ academic\ publications}$

Student internships in the region	
Level	Field Based Ranking
Dimension	Regional Engagement
Definition	Out of the students who did an internship, the percentage where the internship was with a company or organisation located in the region.
Rationale	Internships of students in regional enterprises are a means to build co-operations with regional partners and connect students to the local labour market.
Data source	Department survey
Data elements	Number of students who did an internship in the region Total number of students who did an internship
Time reference	Three year average
Formula	$\frac{\sum_{i=1}^{n} Internships\ in\ the\ region_i * 100}{\sum_{i=1}^{n} Total\ number\ of\ internships_i}$