rijksuniversiteit groningen

UG University Minor Form Guidelines

These guidelines are intended to help you complete the UG University Minor Form.

Version September 2025

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1. Introduction

These guidelines are intended to help you complete the UG University Minor Form. The UG University Minor Form consists of two parts. Part 1 should be submitted as part of the plan letter procedure and will be presented to the Committee Educational Strategy (COS) and the Board of the University, while Part 2 (including Part 1) should be submitted to the Central Minor Coordinator at a later date and will be presented to the University Committee for Education (UCO).

1.1 Application procedure and use of the application form

In accordance with the minor policy, the faculty that is responsible for and therefore coordinates the development of the minor should submit a summary proposal as part of the plan letter procedure, using Part 1 of the UG University Minor Form. The Committee Educational Strategy (COS) will provide strategic advice on whether to introduce a new[1] university minor, prior to the development phase. This strategic advice may require revision of the proposal. The coordinating faculty will only be requested to develop the plan into a full proposal (Part 2 of the UG University Minor Form) once advice has been received from the COS and once the Board of the University has approved the summary proposal for a university minor. On completion of the development phase, the Board of the University will receive instruction from the University Committee for Education (UCO) to assess the quality of the minor.

Note that additional criteria apply if the minor is to be taught in a School for Science & Society. This is indicated on the form where applicable.

These guidelines contain additional information to help you complete Part 1 (Section 2 of the guidelines) and Part 2 (Section 3 of the guidelines) of the UG University Minor Form.

1.2 Global timeline, from application to completion

The global timeline is outlined below, from the moment that the Board of the University sends the plan letter to the introduction of the minor, just under two years later.

December (year *t*)	The Board of the University sends the plan letter to all faculty boards. This letter concerns changes in degree programmes to be introduced in the academic year starting two years later.

[1] The same procedure should be followed for existing minors whose learning outcomes are modified by more than 60%.

Mid-February (*t+1*)	The faculty board submits Part 1 of the UG University Minor Form to the Board of the University as part of its response to the plan letter.
March	The Committee Educational Strategy (COS) discusses the applications for new university minors based on Part 1 of the UG University Minor Form. The COS provides strategic advice to the Board of the University as to whether the application for the new minor meets the set criteria.
April	The Board of the University comes to a decision regarding the minor proposal and informs the faculty board of this.
May – October	The faculty board makes the necessary preparations to start development of the university minor. This may include: putting together a development team, setting aside a budget, and forwarding the design brief to the development team. The development team then sets to work on developing the minor.
Before 1 November	The faculty board sends the complete proposal for the minor, i.e. Parts 1 and 2 of the UG University Minor Form and its enclosures, to the UG Central Minor Coordinator (at minor@rug.nl), with a request that this is presented to the University Committee for Education (UCO).
December	The coordinating faculty includes the minor in its OER.
Before 31 December	The UCO considers the new university minor based on Parts 1 and 2 of the UG University Minor Form and its enclosures. The Board of the University instructs the UCO to decide whether the minor complies with the UG quality assurance protocol.
Before 31 December	The UG Central Minor Coordinator informs the faculty board of the UCO's decision.
From April	Marketing for minor, for example at the Minor Fair.
Start of academic year (*t+2*)	The new UG university minor is introduced.

1.3 Contact person for more information

The UG Central Minor Coordinator supports faculties and lecturers in their application for new university minors. If you have a question about this, please send an email to minor@rug.nl. The coordinator is housed in the Strategy Department of Education & Research.

2. UG University Minor Form – Part 1, for advice from the Committee Educational Strategy (COS)

The purpose of Part 1 of the form is to provide input to enable the COS to provide strategic advice.
Part 1 includes:

- general information;
- summary of the university minor;
- features of the programme;
- alignment between proposed programme and current range of minors on offer;
- alignment between proposed programme and strategy and policy (UG and, if applicable, Schools).

These are discussed in detail below.

2.1 Coordinating faculty

One faculty acts as the coordinating faculty for each university minor. This faculty is responsible for the organizational aspects (including finance) and quality assurance of the minor. The minor is included in the OER of an undergraduate programme of this faculty and therefore falls under the responsibility of the faculty's Programme Committee & Board of Examiners. The faculty board of the coordinating faculty should submit proposals for new university minors (see UG University Minor Form, Section 1.3), in accordance with the plan letter procedure.

2.2 Disciplinarity

University minors have the important feature that they are accessible to every student at the university. The minor space policy distinguishes between discipline-specific minors and cross-discipline minors.
In *discipline-specific minors,* students are introduced to a discipline outside their own degree programme, so that they broaden their academic profile with knowledge and skills from another discipline.
Cross-disciplinary minors are multi-, inter-, or transdisciplinary, and focus on a particular issue or theme. Students learn to apply a broad perspective to issues and gain knowledge and skills that they can use when considering cross-disciplinary problems and collaborating in multidisciplinary environments (see UG University Minor Form, Section 3.2).
The different types of disciplinarity are explained in further detail in Section 4.2 Forms of disciplinarity in education.

2.2.1 Minors developed for the Schools for Science & Society

Additional development criteria apply to university minors to be taught in a School for Science & Society:

- at least three faculties must be involved in the development and teaching of the minor (see UG University Minor Form, Section 1.4);
- the minor must be trans- or interdisciplinary in nature (see UG University Minor Form, Section 6.7; see Section 4.2 for further explanation);
- the minor is to be implemented for six years and evaluated by means of a a midterm after three years and a final reflection after 5 years.

2.3 Criteria for strategic advice

The COS discusses the submitted proposal based on two criteria: (1) its alignment with current minors on offer, and (2) its contribution to the strategic goals of the UG.

When proposing a new minor, the application should make it clear how the minor complements the existing range of university minors on offer. This may be due to its content or form, the introduction of new topics, or the use of innovative teaching and/or assessment methods. Innovation could take the form of collaboration between different disciplines, or involve bringing together different/new modes of instruction (see Section 4 for more information and examples of teaching methods and criteria that apply to cross-disciplinary minors). A list of university minors currently on offer can be found on the UG website. It is recommended to contact the coordinators of related minors to identify any overlap with the proposed minor (see UG University Minor Form, Section 4.1). For additional advice, please contact the UG Central Minor Coordinator.

You should also explain whether, and if so how, the university minor contributes to the strategic goals of the UG and/or societal developments at the national level. In the case of university minors developed for an interdisciplinary School for Science & Society, you should also describe how the proposed cross-disciplinary minor aligns with the School's theme (see UG University Minor Form, Section 4.2).

3. UG University Minor Form – Part 2, for advice from the University Committee for Education (UCO)

Once the Committee Educational Strategy has provided its advice and the Board of the University has approved Part 1 of the UG University Minor Form, the proposed minor programme is described further in Part 2 of the same form. Again, this is the responsibility of the coordinating faculty of the proposed minor.

The purpose of Part 2 of the form is to provide input to allow the UCO to assess the proposed minor against the UG quality assurance framework. The fully completed UG University Minor Form (Parts 1 & 2) plus any enclosures should be submitted as a single file to the UCO.

Part 2 includes:

- proposed minor programme;
- quality assurance;
- development team;
- materials and notes (minor website text, Ocasys teaching catalogue text).

These are discussed in detail below.

3.1 Proposed minor programme

When designing education, alignment between the learning outcomes, modes of instruction, and forms of assessment is crucial. This is called *constructive alignment*.

3.1.1 Learning outcomes

The learning outcomes describe what a student can do or knows once they have completed the minor (see UG University Minor Form, Section 6.1). Consider which teaching and learning activities are required to achieve these learning outcomes (see UG University Minor Form, Section 6.2), and how to measure whether the student has achieved the learning outcomes (see 3.1.2 Forms of assessment and UG University Minor Form, Section 6.3).

When designing high-quality education, many more factors besides *constructive alignment* need to be considered, such as forms of collaboration, time, and location. Van den Akker's curricular spider web model shows ten components of the curriculum – each of which relates to a different part of the learning process – and their interrelationships. The spider web model can be a useful tool when designing education, to

ensure that no components are forgotten. The development team may choose to apply this model to design the minor. The spider web model is described in Appendix I.

3.1.2 Forms of assessment

An assessment matrix can be a useful tool to check that your chosen form of assessment is aligned with the minor's learning outcomes. In the matrix, you indicate what you want to test (the learning outcomes), at what level, and what forms of assessment you will use to do this. The result is a clear overview of how the learning outcomes will be measured and the relationships between the learning outcomes. Watch this video for more information on how to complete an assessment matrix (see UG University Minor Form, Section 6.3).

3.2 Development team

Each minor is usually developed by a team put together for this purpose. As well as the minor content coordinator/developer, the team often includes lecturers and educational advisers, for example. See the table in Section 8.1, UG University Minor Form, for an overview of the different roles. Fill in this table with the names and departments of the people responsible for each role. You may add extra lines if necessary (see UG University Minor Form, Section 8.1).

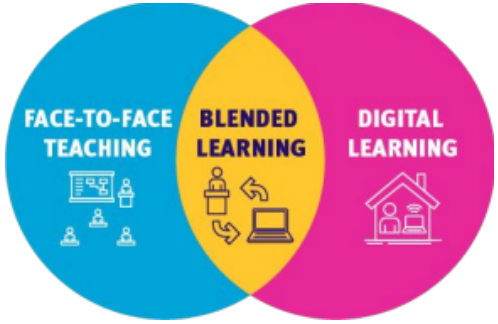
4. Modes of instruction

All university minors should be developed in line with the teaching strategy set out in the UG Strategic Plan.
This means, among other things, that the educational concept should be based as much as possible on the UG teaching strategy of *active learning* (see UG University Minor Form, Section 6.5).

4.1 Active learning

Active learning is defined as follows:

- Shroff: "*The basic premise of active learning involves focusing on reinforcing higher-order thinking skills and instructional techniques, requiring learners to actively participate in the ownership of their learning"* (Shroff, Ting & Lam, 2019)[2].
- Active learning combines face-to-face teaching with digital learning (blended learning takes place in the overlap between the two; see figure below). Due to the way in which the lessons are designed, students take an active role in their learning process, rather than being passive consumers. Different forms of active learning can be distinguished, such as problem-based, collaborative, cooperative, and engaged learning. In all these forms, social interaction is named as an important element, but there is consensus that active learning can also take place solitarily. At its core, active learning is about encouraging students' active involvement in their learning process.



[2] Shroff, R. H., Ting, F. S. T., & Lam, W. H. (2019). Development and validation of an instrument to measure students' perception of technology-enabled active learning. *Australian Journal of Educational Technology*, *35(4)*.

4.1.1 Challenge-based education

In the case of a minor developed for a School for Science & Society, at least 10 ECTS credits must be obtained through *challenge-based education (CBE*). CBE is a form of *active learning* in which students learn while working together to develop solutions to challenges in society. Students therefore gain knowledge while also working on transversal skills (see UG University Minor Form, Section 6.5A).

Practical information on the implementation of CBE by the UG as a member of ENLIGHT, a European alliance of universities, is provided in Appendix II. Information is also included on practical research into CBE.
The Teaching Academy Groningen has collated as much knowledge and expertise as possible in the Interdisciplinary Education community of practice CBE focus group, which it has made accessible to lecturers through the website and other channels.

4.2 Forms of disciplinarity in education

University minors can be discipline-specific or cross-discipline. For cross-disciplinary minors, a distinction is made between multi-, inter-, and transdisciplinary minors.
Multidisciplinary teaching means considering a subject from the perspective of different disciplines at the same time, with the aim to provide students with a broader and deeper understanding of a subject. This could take place, for example, through guest lectures. The aim is therefore not to combine the different disciplines.

Interdisciplinary education refers to working on a concept or assignment from multiple perspectives. This form of teaching integrates different academic disciplines (concepts, models, methods, findings). It enables students to consider and understand insights from different disciplines, and leads to a more comprehensive understanding of the material.
For more information on interdisciplinary education, click here.

Transdisciplinary education goes one step further. It generally involves a complex societal problem, which is considered from different academic and practical disciplines to arrive at sustainable knowledge and a solution to the problem. In addition to students or academics, other partners may be involved in exploring the complex question to reach collaborative insights. These may be companies, local government bodies, or other civil society organizations.

Minors developed for a School for Science & Society should be of an inter- or transdisciplinary nature.
The inter- or transdisciplinarity criterion can be met by bringing together a group of students from different degree programmes to work together in an inter- or transdisciplinary manner. In other words, students not only use knowledge from their own degree programme, but work

together in a way that enables them to learn from and with each other. They need this combined knowledge to successfully complete the minor. This is not always possible in practice, but interdisciplinarity can also be created by offering knowledge/skills from different disciplines during the minor.

These concepts have been further developed by the University of Twente[3] (see table below for inspiration).

	Multidisciplinary	Interdisciplinary	Transdisciplinary
Type of problem	relatively prestructured carefully balanced disciplines	open-ended loosely coupled to disciplines	'wicked' global problem at local level loosely coupled to discipline
Learning outcomes	application and deepening of disciplinary knowledge collaboration and communication with other disciplines	identification and use of knowledge from academic sources collaboration and teamwork across disciplines	identification and use of new knowledge from academic and non-academic sources co-creation and change across disciplinary and societal boundaries
Problem-solving process	decomposition along disciplinary lines alignment and aggregation of disciplinary contributions	synthesizing and linking disciplinary contributions	bricolage of disciplinary and non-disciplinary contributions local knowledge creation
Stakeholder involvement	providing challenges/issues that are carefully aligned with the learning objectives	providing challenges that are relevant for their practice providing information and feedback	multiple stakeholders around societal challenges co-learning, co-creating, co-assessing

[3] Keynote 'Transdisciplinary Education for Shaping Responsible Futures', 27 March 2023. Link: https://www.rug.nl/about-ug/organization/service-departments/teaching-academy-groningen/education-festival/

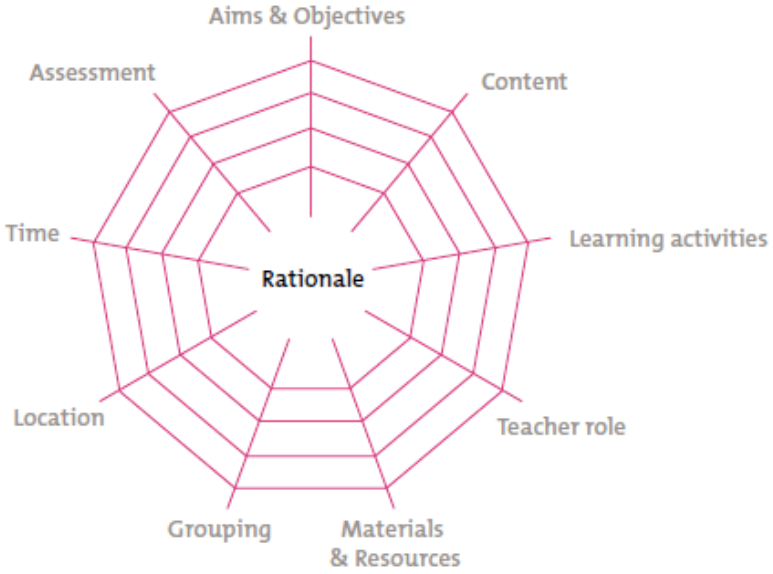
Appendices

I. Curricular spider web model
II. Concretization of challenge-based education
III. Logistical aspects of implementation

I. Curricular spider web model

Van den Akker's curricular spider web model shows ten components of the curriculum that each relate to a different part of the learning process. It is an enlightening way of visualizing the relationships between the different components.

This template is based on the spider web curriculum development model (Thijs & Van den Akker, 2009[4]) and aims to structure the decision-making process when developing a university minor.



Component	Key questions
1. Rationale	Why are students learning this? Profile building, knowledge development, societal engagement, broad development.

[4] Thijs, A., & Akker, J. van den. (2009). Leerplan in ontwikkeling. Enschede: SLO (website). Published in: Akker, J. van den. (2009). Curriculum Perspectives: An Introduction. In J. van den Akker, W. Kuiper, & U. Hameyer (Eds.), Curriculum Landscapes and Trends. https://doi.org/10.1007/978-94-017-1205-7

2. Aims and objectives	Towards which goals are they learning? End goals, link with university teaching strategy and policy (see UG Strategic Plan).
3. Learning content	What are they learning? Learning outcomes, learning pathways, learning content during the minor.
4. Learning activities	How are they learning? Characteristic learning activities, challenge-based education (CBE), alignment between modules.
5. Lecturer's role	How is the lecturer facilitating the student's learning? Lecturers, internal or external project partners, guest lecturers, etc.
6. Materials and teaching resources	What are they learning with? Existing resources and self-produced resources. Is specific use made of open educational resources?
7. Grouping	Who are they learning with? Unit structure (group, individual) per learning outcome/module, influence of student on group composition, interdisciplinary units.
8. Location	Where are they learning? Area/room inside or outside the university.
9. Time investment	When are they learning? Timeline of the minor.

10. Assessment	How is their learning assessed? Formative/summative assessment, assessment methods.

II. Concretization of challenge-based education

ENLIGHT

The University of Groningen and Ghent University worked particularly closely in the ENLIGHT consortium to develop information materials on theory and practice for lecturers. After providing a definition of CBE and offering a solid theoretical background, the three phases Engage, Investigate, and Act are explained. Then, based on experiences and research, a highly practical approach is taken to provide lecturers with concrete pointers on how to integrate CBE into their teaching practice. This covers developing assessments and supervising students, and highlights the advantages and disadvantages of CBE.

- Challenge-based education in ENLIGHT.
- A brief guide to CBE.
- Challenge-based education at the University of Ghent.

The UG does not offer specific CBE training, but it does run MicroLabs that focus on the implementation of active teaching & learning activities as part of the range of training courses available for lecturers: see here.

Research

While CBE is a relatively new teaching method, three systematic literature reviews have been conducted in the last two years, indicating that this is a young research field still in its early stages.

- Leijon, M., Gudmundsson, P., Staaf, P., & Christersson, C. (2022). Challenge based learning in higher education – A systematic literature review. *Innovations in Education and Teaching International, 59* (5), 609-618. https://doi.org/10.1080/14703297.2021.1892503
- Van den Beemt, A., van de Watering, G., & Bots, M. (2022). Conceptualising variety in challenge-based learning in higher education: the CBL-compass. *European Journal of Engineering Education*. https://doi.org/10.1080/03043797.2022.2078181
- Gallagher, S. E., & Savage, T. (2020). Challenge-based learning in higher education: an exploratory literature review. *Teaching in Higher Education*. https://doi.org/10.1080/13562517.2020.1863354

Van den Beemt et al. describe a practical CBE compass based on their findings, which is very useful for lecturers developing a minor. The compass consists of two parts: first, it distinguishes between the three levels of (1) vision and challenge, (2) teaching and learning, and (3) support, then a set of dimensions and indicators are created for each of these.



For example, four indicators are formulated for the vision & challenge level in the 'real-life open-ended challenges' dimension:

- The extent to which challenges are real-life and authentic (scale: theoretical <-> abstract to real-life).
- The extent to which challenges are open-ended (scale: predefined <-> open-ended).
- The extent to which challenges are complex (scale: one-dimensional <-> complex).
- The extent to which challenges are interdisciplinary (scale: monodisciplinary, multidisciplinary, interdisciplinary).

During the development process, the CBE compass provides insight into the balance between the design and implementation of various aspects. For example, the CBE compass was applied to the Technology Forecasting course for students in innovation sciences. The variable scores for indicators under 'real-life open-ended challenges' indicate that the assignments tend to be theoretical and structured, while differences in scores for dimensions under 'vision' raise questions about the attention paid to CBE and the targeted implementation of specific aspects.

Furthermore, the indicators under 'teaching and learning' seem to be generally well implemented, except for self-directed learning. These observations were cause for reflection among the lecturers, who concluded that, although their goals were ambitious, students often struggled to reach the required levels. Even though the course focused on interdisciplinary teamwork, the indicators for collaboration – especially peer

review – scored remarkably low, raising questions about the alignment between the different aspects of collaboration, including communication with team members and external stakeholders, and the characteristics of interdisciplinarity.



III. Logistical aspects of implementation

Scalability

When designing a university minor, it is helpful to think in advance about whether the minor will be scalable if demand turns out to be higher than expected.
CBE is often characterized as intensive teaching, meaning in terms of the commitment required of the lecturer, and capacity may therefore be limited to a maximum of 30–40 students. Experiences in scaling up this type of education are still limited, but initial experiences can be useful: one point is that it is important to consider options that ensure that the quality of education is maintained when scaling up.

Several points relevant to the scalability of interdisciplinary education are given below:

- **Limit intensive forms of instruction:**
  As a lecturer, you have the flexibility to apply CBE in different ways, whether you integrate a few aspects of CBE into a predominantly traditionally designed minor or design a complete minor based on CBE principles.
- **Support infrastructure:**
  The availability of resources such as financial support, technological support, and suitable locations can improve the scalability of interdisciplinary education. The UG has several large Active Learning Classrooms.
- **Technology integration:**
  The use of technologies for virtual collaboration and online learning can improve scalability by increasing access to interdisciplinary education, regardless of the physical location of students and lecturers. Note that professional development courses are available to lecturers, including the Designing Successful Blended Courses MicroLab.