Call for Proposals

NWO Open Competition Domain Science - GROOT

2018

The Hague & Utrecht, June 2018
Netherlands Organisation for Scientific Research
Contents

1 Introduction
   1.1 Background 1
   1.2 Available budget 1
   1.3 Validity call for proposals 2

2 Aim 3

3 Guidelines for applicants
   3.1 Who can apply 4
   3.2 What to apply for
      3.2.1 Financial building blocks (modules) 5
      3.2.2 Collaboration with Luxembourg 8
   3.3 When can you apply? 8
   3.4 Drawing up an application 8
   3.5 Funding conditions 9
   3.6 Submitting an application 10

4 Assessment procedure 11
   4.1 Procedure
      4.1.1 Global timetable 12
   4.2 Criteria 13

5 Contact and other information 14
   5.1 Contact
      5.1.1 Specific questions 14
      5.1.2 Technical questions about the electronic application system ISAAC 14
   5.2 Other information 14

6 NWO Domain Science research fields 15
1 Introduction

1.1 Background

NWO stimulates excellent, curiosity-driven, disciplinary, interdisciplinary and multidisciplinary research. In doing this, NWO focuses on all scientific disciplines and the entire knowledge chain with an emphasis on fundamental research. Fundamental scientific research forms the foundation for understanding the world around us, for understanding the natural and human past, and for making important new discoveries. Non-programmed fundamental research is necessary for innovations that make society economically successful and socially resilient. Conversely questions from society can give rise to new fundamental questions.

In this Call for Proposals you will find information about how to submit research proposals for curiosity-driven, fundamental research in the research fields of the NWO Domain Science. This funding instrument is open for research proposals with a question in or overlapping the fields of earth sciences, astronomy, chemistry, computer science, life sciences, physics and mathematics. Proposals can be monodisciplinary, multidisciplinary or interdisciplinary in nature. The NWO Domain Science has two different types of funding that you can submit proposals for in open competition. These are the small-scale (KLEIN) and large-scale (GROOT) grants. This Call for Proposals describes the large-scale grants.

KLEIN grants are divided into three categories: KLEIN-1 (1 scientific position), KLEIN-2 (2 scientific positions in collaboration) and KLEIN-0 (investments) that are assessed in competition with each other. For more detailed information about these grants we refer you to the Call for Proposals NWO Open Competition Domain Science – KLEIN.

1.2 Available budget

A total of € 47,028,807 is available for the awarding of GROOT grants in the 2019-2020 funding round.

If additional funds become available then NWO retains the right to increase the level of funding available. In such a case, the increase in the level of funding will be announced in good time. No rights for third parties may be derived from this.

The NWO Domain Science Board has not pre-determined the allocation of funds over (sub)disciplines and neither has it determined the number of grants to be awarded. The assessment of the proposals and awarding of the grants will take place in accordance with the selection procedure as stated in Section 4.1. Only research proposals with the qualification "excellent" or "very good" are eligible for funding.
1.3 Validity call for proposals

This Call for Proposals is valid with effect from 1 August 2018.

The deadline for submitting pre-proposals is Tuesday 12 February 2019, at 14:00 hours CEST.

The deadline for submitting full proposals is Thursday 26 September 2019 at 14:00 hours CEST.
2 Aim

GROOT grants are intended for consortia in which research groups use collaboration (coordinated consolidation of strengths and areas of expertise) to create added value compared to individual KLEIN grants. An outstanding track record and the quality of the scientific results achieved by the applicant(s) are important criteria in assessing the proposals submitted. The GROOT grant gives researchers the opportunity and freedom to strengthen and/or expand excellent, challenging and innovative lines of research.

Applications with a (partial) domain-overarching component shall be considered by the NWO Domain Science. For this expertise from the other domains concerned will be involved where necessary.

\[1\] In this call for proposals the word 'researchers' refers to both women and men.
3 Guidelines for applicants

3.1 Who can apply

Full, associate and assistant professors and other researchers with a comparable appointment can submit an application if they:

- are employed (i.e. hold a salaried position) at one of the following organisations:
  - Dutch universities;
  - University medical centres;
  - NWO and KNAW institutes;
  - the Netherlands Cancer Institute;
  - the Max Planck Institute for Psycholinguistics in Nijmegen;
  - researchers from the DUBBLE Beamline at the ESRF in Grenoble;
  - NCB Naturalis;
  - Advanced Research Centre for NanoLithography (ARCNL);
  - Princess Máxima Center;
  - Royal Netherlands Meteorological Institute;
- and also have an appointment period for at least the duration of the application procedure and the entire duration of the research for which the grant is being applied for.

An exception to the required duration of appointment can be made for:
- applicants with a “tenure track” appointment that does not cover the entire duration of the project. The applicants should then demonstrate by means of a letter that adequate supervision is guaranteed for the entire duration of the research for all researchers that they request funding for.

For each round you may only act as the main applicant once and you may only be involved in a maximum of two applications (as the main applicant or co-applicant).

The representation and promotion of women in science lags considerably behind that of men. NWO therefore strongly encourages women to submit proposals.

3.2 What to apply for

Everything that you apply for (positions, material budget, and investment) must be commensurate with the research proposed. You should only apply for funding that is vital for carrying out the research and provide reasons for this. This does not mean that the application should always be for the maximum permitted budget.

You can request funding for four or more temporary scientific positions if different research groups from at least two different institutions (for example universities or NWO or KNAW institutes) work together. For this grant, the scientific positions in combination with the material budget and any possible investments (equipment) in the application should be at least k€ 1,000 and at most k€ 3,000.

The scientific positions that may be applied for are PhDs, postdocs or technical personnel (to support the PhDs and postdocs in the same proposal). These positions must be allocated across the participating research groups.
3.2.1 Financial building blocks (modules)

You put the budget together using the NWO-wide standardised building blocks, the so-called modules. In this call the modules “Personnel” (1a, 1b and 1c), “Material credit” (2), “Investments” (3) and “Internationalisation” (5b) can be applied for as often as is necessary for the intended research; of course within the maximum permitted grant size.

Personnel costs

The salary costs for personnel are dependent on the type of appointment and will be remunerated according to the agreements in the ‘Agreement for Funding Scientific Research’ made with the Association of Universities in the Netherlands and are based on the collective labour agreement of the Dutch universities (for ZonMw, the costs are based on the collective labour agreement of the Netherlands Federation of University Medical Centres). The agreement and the maximum amounts for personnel costs can be found at [www.nwo.nl/en/documents/nwo/salary-tables/approval-of-funding-for-scientific-research-2008](http://www.nwo.nl/akkoordbekostiging) and [www.nwo.nl/en/funding/funding+process+explained/salary+tables](http://www.nwo.nl/salaristabellen).

**Module 1a – PhD/PDEng/MD PhD/**
The guideline is that 1 fte PhD for 48 months or 0.8 fte for 60 months can be applied for. If a different duration of appointment is desired for the realisation of the proposed research, then the guidelines may be deviated from as long as this is well justified (e.g. PDEng 2 years or MD-PhD longer than 4 years).

**Module 1b – Postdoc**
The guideline is that for the appointment of a postdoc a period of between 12 and 48 months can be chosen with a minimum appointment of 0.5 fte. This deployment can be spread over a longer or shorter period, for example across the entire duration of the project. If the applicants wish to deploy expertise for a shorter period of time, then the material credit can be used for this.

**Module 1c – Non-scientific personnel**
For the appointment of non-scientific personnel, specifically needed for the research project which funding is applied for, a maximum of € 100,000 can be requested with this module. This can concern personnel such as student assistants, programmers, technical assistants, analysts, et cetera. This module can only be applied for in combination with 1a and/or 1b. The minimum size of the appointment is 0.5 fte for 12 months. The minimum appointment can be spread over a longer period of time. If the applicants wish to deploy expertise for a shorter period of time, then the material credit can be used for this.

**Bench fee**
In addition to salary costs, the project employee funded by NWO (from module 1a and/or 1b) will receive a one-off individual bench fee (€ 5000) to encourage his or her scientific career.
**Material costs**

**Module 2 – Material credit**
A maximum of € 15,000 per year per full-time scientific position (modules 1a and 1b) can be applied for in material credit, in accordance with the three categories stated below.

**Project-related goods/services**
- consumables (glassware, chemicals, cryogenic fluids, etc.);
- equipment and/or software (e.g. lasers, specialist computers or computer programs, etc.). For these small items of equipment and/or software, the amount may not be more than € 160,000 per application;
- measurement and calculation time (e.g. supercomputer access, etc.)²
- costs for acquiring or using data collections (e.g. from Statistics Netherlands)
- access to large national and international facilities (e.g. cleanrooms, synchrotrons, datasets, etc.);
- work by third parties (e.g. laboratory analyses, data collection, etc.)
- personnel costs smaller in size than those offered in module 1.

**Travel and accommodation costs** (for personnel applied for with module 1)
- travel and accommodation costs (national and international);
- congress visits (maximum 2 per year);
- fieldwork;
- work visits.

**Implementation costs**
- national symposium/conference/workshop organised by the project;
- costs of open access publishing;
- data management costs;
- recruitment costs (incl. advertisement costs);
- costs involved in applying for licences (e.g. for animal experiments).

**Costs that cannot be applied for are:**
- basic facilities within the institution (e.g. laptops, desks, et cetera);
- maintenance and insurance costs.

If the maximum amount van € 15,000 per year per full-time scientific position is not sufficient for realising the research, then it may be deviated from if a clear justification is provided in the proposal. The maximum amount for small equipment (€ 160,000) is an exception to this.

---

² Calculation time on the National Computer Systems is a separate grant with which researchers can gain access to the Cartesius Supercomputer of the LISA cluster. See also: [www.nwo.nl/rekentijd](http://www.nwo.nl/rekentijd)
Investments

Module 3 – Investments up to the lower limit of Investment Grant NWO Large

In this module, funds can be requested for investments in scientifically innovative equipment and data collection of national and international importance. You must extensively specify and justify the costs for investments.

Funding can be requested for:
- costs for investments in scientific equipment and datasets;
- personnel costs for the setting up of databases and the initial digitisation for the bibliographic equipment if this cannot be purchased;
- personnel costs for employees with a specific and vital technical expertise needed for the development or construction of an investment.

If funding is requested to cover personnel costs, then it must be justified why these personnel costs are necessary, why the facility concerned cannot be purchased, and why the necessary personnel expertise cannot be hired elsewhere against comparable costs.

Funding cannot be requested for:
- costs for infrastructural facilities that can be attributed to the standard infrastructure;
- data collections and any possible associated software and bibliographies that are already available through other means (see for this material costs);
- other personnel costs, including personnel costs for the exploitation of the facility and the research carried out using it;
- maintenance and use of the equipment as the costs for the use of equipment by the researchers that are appointed to the project can be requested via the material costs module.

The amount requested from NWO may not be more than € 500,000. The minimum for the total investment is € 160,000 for equipment and € 25,000 for data collections. The host institution must contribute at least 25% of the costs for the investment.

Internationalisation

Module 5b – Internationalisation Money follows Cooperation (MfC)

The aim of this module is to encourage international collaboration via the principle of Money follows Cooperation (MfC) for which the national research budget is used for cross-border collaboration. Money follows Cooperation offers the opportunity to create added value for individual research projects by deploying expertise from abroad, which is not available in the Netherlands at the desired level for the project. This concerns expertise from organisations outside of the Netherlands that have a public task and carry out research independently. In the proposal, the applicant must convincingly demonstrate that the expertise concerned is not available in the Netherlands. This will be assessed during the assessment process. If the arguments are not sufficiently convincing, then the funds for this module cannot be made available. Furthermore, the applicant needs to state the amount to be deployed for this module in the budget. In principle, there is no limit to the amount that can be requested.
Chapter 3: Guidelines for applicants / NWO Open Competition Domain Science – GROOT

3.2.2 Collaboration with Luxembourg

NWO has made agreements with the Fonds National de la Recherche (FNR) in Luxemburg about the joint funding of bilateral projects. You can expand a GROOT grant (proposal) with a collaboration with a research group from Luxemburg. The foreign component does not count for determining the minimum or maximum budget size on the Dutch side. NWO will assess a proposal in its entirety in consultation with the FNR. Please contact NWO (see Section 5.1) if you are considering this variant or if you would like to receive further information about this.

3.3 When can you apply?

The deadline for submitting pre-proposals is Tuesday 12 February 2019, at 14:00 hours CEST.

The deadline for submitting full proposals is Thursday 26 September 2019 at 14:00 hours CEST.

When you submit your application to ISAAC you will also need to enter additional details online. You should therefore start submitting your application at least one day before the deadline of this Call for proposals. Applications submitted after the deadline will not be taken into consideration. You cannot improve or add things to the application after the deadline. You do however have the right to withdraw your application.

3.4 Drawing up an application

Anyone who satisfies the submission criteria as stated in Section 3.1 can (jointly) submit a pre-proposal for a GROOT grant. You can only submit a full proposal for a GROOT grant if the pre-proposal has successfully passed through the first step (see the selection procedure).

You must write the pre-proposal/full proposal in English using the available application form. When it appoints the advisory and selection committees, NWO will do its best to choose experts for the research areas stated by the applicant. You must therefore select one or more research areas that best match your research proposal. In Chapter 6 you will find a list with the research areas relevant for the NWO Domain Science.

Furthermore, NWO kindly requests that you, as the applicant, make at least three and at most five suggestions for foreign referees who we may be able to consult. The list with suggestions for referees may not contain any names of people that the applicant has worked with during the past three years, is currently working with or expects to work with. The suggested referees may not be working in the Netherlands. In addition, the applicant may state the names of five people who may not act as referees. This is not compulsory. You can state the non-referees and suggestions for referees in ISAAC at the same time as you submit your application.

For every proposal submitted, NWO assumes that the applicant has informed the host institution and that the university or institute has accepted the funding conditions of this programme.
3.5 Funding conditions

The NWO Grant Rules 2017 and the Agreement for Funding Scientific Research apply to all applications. In accordance with the NWO Grant Rules 2017 the maximum duration of a grant is six years and the costs are project specific if there is no funding from other sources.

Open Access

All scientific publications from research that is funded on the basis of grants awarded from this Call for Proposals should be immediately (prior to publication) and freely accessible worldwide (Open Access). There are several ways for researchers to publish Open Access. A detailed explanation regarding Open Access can be found at www.nwo.nl/openscience-en.

Data management

Responsible data management is part of good research. NWO wants research data that emerge from publicly funded research to become freely and sustainably available, as much as possible, for reuse by other researchers. Furthermore, NWO wants to raise awareness among researchers about the importance of responsible data management. Proposals should therefore satisfy the data management protocol of NWO. This protocol consists of two steps:

1. Data management section

The data management section is part of the research proposal. Researchers answer four questions about data management within their intended research project. This requires that before the start of their research they think about how the data collected must be ordered and categorised for Open Access publication. Researchers will often have to take measures during the collection and analysis of the data to make their later storage and dissemination possible. Researchers can state which research data they consider to be relevant for storage and reuse.

2. Data management plan

After a proposal has been awarded funding, the researcher should elaborate the data management section into a tangible data management plan. In the plan, the researcher describes whether he/she will make use of existing data or whether it concerns a new data collection. He/She will add how his/her data collection will be made FAIR (findable, accessible, interoperable and reusable). The plan should be submitted to NWO via ISAAC within a maximum of four months after the proposal has been awarded funding. NWO will approve the plan as quickly as possible. Approval of the data management plan by NWO is a condition for disbursement of the funding. The plan can be adjusted during the research.

Further information about the data management protocol of NWO can be found at www.nwo.nl/en/policies/open+science/data+management.

http://www.nwo.nl/datamanagement

Nagoya Protocol

The Nagoya Protocol became effective on 12 October 2014 and ensures an honest and reasonable distribution of benefits emerging from the use of genetic resources (Access and Benefit Sharing; ABS). Researchers who make use of genetic sources from the Netherlands or abroad for their research should familiarise themselves with the Nagoya Protocol (www.absfocalpoint.nl). NWO assumes that researchers will take all necessary actions with respect to the Nagoya Protocol.
3.6 Submitting an application

An application can only be submitted to NWO via the online application system ISAAC. NWO will only consider proposals that have been submitted via ISAAC.

A main applicant must submit his/her application via his/her own ISAAC account. If the main applicant does not have an ISAAC account yet, then he/she must create this at least one day before the application is submitted to ensure that any registration problems can be resolved in time. If the main applicant already has an NWO account, then he/she does not need to create a new account to submit a new application.

For technical questions please contact the ISAAC helpdesk, see Section 5.1.2.5.1.2
4 Assessment procedure

4.1 Procedure

Admissibility
The first step in the assessment procedure is to test whether the pre-proposal/full proposal is admissible. On behalf of the NWO Science Domain Board, the NWO Science office will assess the appropriateness and completeness of the pre-proposal/proposal. Only those pre-proposals/full proposals that satisfy the criteria as described in chapter 3, are admissible and will be taken into consideration. All pre-proposals/full proposals submitted are in competition with each other. The assessment will take place in two steps.

Step 1: Pre-proposals
Based on the research areas chosen by the applicants various advisory committees will be appointed to assess similar research areas. The pre-proposals will be allocated across the various advisory committees (a proposal can be allocated to several advisory committees). The advisory committees will assess the pre-proposals using the criteria and can invite all applicants for an interview. The pre-proposals will not be submitted to referees. On the basis of the pre-proposal and the possible interview, the advisory committees will produce an advisory report that will be submitted to the applicant(s) for a rebuttal. In addition, the advisory committees will state which pre-proposals could be considered for further elaboration. The advisory reports issued by the advisory committees together with the pre-proposals and the rebuttals will be submitted to a NWO Domain Science domain-wide assessment committee. The assessment committee will establish a motivated ranking of the pre-proposals that are eligible for further elaboration and will submit this ranking to the domain board. The NWO Domain Science Board will decide which pre-proposals may be elaborated into full proposals. A basic principle for this decision is that the total budget applied for in the proposals will be about twice the available budget. The candidates with the highest chance of being awarded funding will be invited to submit a full proposal before the deadline.

Step 2: Full proposals
As soon as a full proposal is declared admissible, NWO will submit this to external referees for advice. These independent advisers are experts in the field of the proposal. For each proposal NWO will try to consult at least four referees but at least three referees will assess each proposal. The referees will assess the proposal against the assessment criteria as detailed in Section 4.2 and will not give a graded assessment. The referees' reports will be made anonymous and will be sent to the applicant for a written rebuttal. The advisory committees from the first step will play no role during the second step. The assessment committee will have the same members in the first and second steps. During the interview the main applicant will explain the proposal by means of a presentation to the assessment committee. The committee members will then have the opportunity to ask questions. The committee can also ask new questions that were not raised by the referees. During the interview the applicant can respond to these in a discussion with the committee so that a hearing and rebuttal procedure takes place. The assessment committee will subsequently determine the ranking and selection of the best proposals in the second step based on the full proposals, the referees' reports, the rebuttal and the interview with the applicant. After the interviews the assessment committee will submit a motivated proposal to the domain board as to which full proposals should be awarded funding. In this proposal the assessment committee will take into account all of the criteria as described in Section 4.2. Based on the proposal of the assessment committee, the funding available and any possible policy aspects (for
example on the basis of the NWO Domain Science strategy) the domain board will
decide which proposals will be awarded funding and which will be rejected.

4.24.2 General

**Code of Conduct on Conflicts of Interest**
The NWO Code of Conduct on Conflicts of Interest applies to all persons and NWO
staff involved in the assessment and/or decision-making process. See also:

**Integrity**
In the NWO Grant Rules 2017 it is stated that all research funded NWO must be
carried out in accordance with the nationally and internationally accepted standards
for scientific conduct as stated in the Netherlands Code of Conduct for Scientific
Practice 2012 (VSNU). Further information about the NWO policy on scientific
integrity can be found on the website:
cientific-integrity-policy

**Encouraging female researchers**
If two proposals receive an equal ranking then the domain board will give
preference to the proposal from a female main applicant.

**Data management**
The data management section in the application is not evaluated and therefore not
included in the decision about whether to award funding. However, both the
referees and the committee can issue advice with respect to the data management
section. After a proposal has been awarded funding, the researcher should elaborate
the data management section into a data management plan. Applicants can use the
advice from the referees and the committee when writing the data management
plan. A project awarded funding can only start after NWO has approved the data
management plan.

**Qualification**
NWO will award a qualification to all full proposals and will make this known to the
researcher with the decision about whether or not the application has been awarded
funding.

4.1.1 Global timetable

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 February 2019, 14.00 hours</td>
<td>Deadline submission pre-proposals</td>
</tr>
<tr>
<td>mid-May 2019</td>
<td>Applicants informed about advice and open for rebuttal</td>
</tr>
<tr>
<td>mid-June 2019</td>
<td>Assessment committee meeting</td>
</tr>
<tr>
<td>end June 2019</td>
<td>Applicants informed about outcome of pre-proposals and invitation to submit full proposals</td>
</tr>
<tr>
<td>26 September 2019, 14:00 hours</td>
<td>Deadline submission full proposals</td>
</tr>
<tr>
<td>October-November 2019</td>
<td>Referees consulted and rebuttal process</td>
</tr>
<tr>
<td>January 2020</td>
<td>Interviews</td>
</tr>
<tr>
<td>February 2020</td>
<td>Decision taking</td>
</tr>
</tbody>
</table>
4.2 Criteria

For the assessment of proposals within the NWO Domain Science Open Competition the basic principle is that the proposals must clearly describe what will be investigated, who will carry out the research and why the research should be carried out. This is expressed in the following criteria:

**Criterion 1: Scientific quality of the proposal (What)**
This includes:
- the clarity of the proposal, question posed and the objectives;
- scientifically innovative and/or groundbreaking elements;
- the scientific approach: (challenge in) the approach and the feasibility of this;
- the effectiveness in terms of methodology proposed.

**Criterion 2: Scientific and/or societal impact (Why)**
This includes:
- the importance of potential research results in the short and long term in the own discipline;
- strengthening of the (inter)national position of the own discipline;
- knowledge utilisation: possible use and relevance of the knowledge generated in other science areas and/or society (economic, technical, social or cultural, for example via outreach).

**Criterion 3: Quality of the consortium (Who)**
This includes:
- the quality and scientific achievements of the participating research groups insofar as these are relevant for the successful realisation of the proposal submitted;
- sufficient critical mass;
- the collaboration offers a clear added value;
- a clear and effective organisation structure of the consortium;
- appropriate expertise and (access to) the equipment needed.

The criteria will be weighted as follows in the assessment:
Scientific quality of the proposal is 40% of the final score, the scientific and/or societal impact 30% and the quality of the consortium 30%.

Only applications that receive the qualification "excellent" or "very good" will be eligible for funding. For more information about the qualifications please see [www.nwo.nl/en/funding/funding+process+explained/nwo+qualification+system](http://www.nwo.nl/kwalificaties).
Chapter 5: Contact and other information / NWO Open Competition Domain Science – GROOT

5  Contact and other information

5.1  Contact

5.1.1  Specific questions

For specific questions about NWO Open Competition Domain Science and this Call for Proposals please contact:

dr. K. (Katrien) Uytterhoeven, tel.: +31 (0)70 344 09 48, email: ENW-Groot@nwo.nl
dr.ir. R. (Remko) Achten, tel.: +31 (0)70 349 45 65, email: ENW-Groot@nwo.nl

5.1.2  Technical questions about the electronic application system ISAAC

For technical questions about the use of ISAAC please contact the ISAAC helpdesk. Please read the manual first before consulting the helpdesk. The ISAAC helpdesk can be contacted from Monday to Friday between 10:00 and 17:00 hours CEST on +31 20 346 7179. However, you can also submit your question by email to isaac.helpdesk@nwo.nl. You will then receive an answer within two working days.

5.2  Other information

The Dutch version of the Call for Proposals supersedes the English translation. No rights can be derived from the English translation.
6 NWO Domain Science research fields

Applications only fall within the scope of this Call for Proposals if they are in or overlap with the fields of earth sciences, astronomy, chemistry, computer science, life sciences, physics and mathematics. In the application you should state which of the following research areas (at least one) is applicable and for each research discipline you should state a percentage (at least 20%, totalling 100%). The NWO Domain Science office will use the research areas stated to allocate the proposals submitted across the assessment committees. Of course there are various research areas that cannot be allocated to one discipline. A few research areas are therefore listed under several disciplines in the list below; the disciplines are stated to make it easy to find the research areas. The research areas are listed in alphabetical order per discipline.

**Astronomy, astrophysics**
- Astronomical instrumentation
- Cosmic rays
- Experimental astronomy
- Formation and evolution of stars and planets
- Galaxies and cosmology
- Interstellar matter
- Planetary research
- Supernovae and compact objects
- Theoretical astronomy

**Chemistry**
- Analytical chemistry
- Biochemistry
- Biomolecular chemistry
- Biotechnology
- Catalysis
- Chemical biology
- Chemical technology, process technology
- Macromolecular chemistry, polymer chemistry
- Molecular biology
- Inorganic chemistry
- Organic chemistry
- Physical chemistry
- Structural biology
- Synthetic biology
- Theoretical chemistry, quantum chemistry

**Computer Science**
- Artificial intelligence, expert systems
- Bioinformatics/biostatistics, biomathematics, biomechanics
- Computer graphics
- Computer simulation, virtual reality
- Computer systems, architectures, networks
- Information systems, databases
- Software, algorithms, control systems
- Theoretical computer science
- User interfaces, multimedia
**Earth sciences**
Atmosphere sciences
Geochemistry, geophysics
Geodesy, physical geography
Geodynamics, sedimentation, tectonics, geomorphology
Geotechnics
Hydrosphere sciences
Palaeontology, stratigraphy
Petrology, mineralogy, sedimentology
Planetary science

**Life sciences**
Agronomy
Anatomy, morphology
Animal behaviour
Animal health, animal welfare
Aquatic and marine biology
Biochemistry, biogeochemistry
Biogeography, taxonomy
Bioinformatics
Biomedical research
Biophysics, clinical physics
Biostatistics, biomathematics, biomechanics
Biotechnology
Cell biology, histology
Developmental biology
Ecology
Environmental biology
Evolutionary biology
Epidemiology
Genetics, genomics
Immunology, serology
Microbiology, virology, parasitology
Molecular biology
Neurosciences
Nutrition, food
Physiology
Plant sciences
Stem cell Biology
Synthetic biology
Systems biology
Theoretical biology, modelling
Toxicology (biota, environment)
Zoology

**Mathematics**
Algebra, group theory
Fourier analysis, functional analysis
Functions, differential equations
Geometry, topology
Logic, set theory and arithmetic
Numerical analysis
Operations research
Probability theory, statistics
Physics
Biophysics, clinical physics
Condensed matter and optical physics
Fusion physics
Mathematical physics
Nanophysics/technology
Phenomenological physics
Processes in living systems
Subatomic physics
Theoretical physics