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Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7101: Scientific colloquia and courses

Learning objectives	**Scope of the module**
a) scientific contribution in a research area b) Review of scientific talks at mathematical conferences **Competencies** a. Fundamental ability to engage in scientific appraisal and discourse within the framework of academic events of research-based relevance to the candidate's own research area b. Presentation of research results to a specialist audience	3 C / 2 WLH Workload in hours: 90 Attendance in hours: 28 Self study in hours: 62
Courses and examinations Advance graduate seminar Performance record prerequisites: – Student lecture (approx. 75 minutes) and discussion	**WLH individual** 2 WLH

Options Compulsory module	**Qualifications for entry** None
Reassessment Twice	**Applicability** Doctoral degree course "Mathematical Sciences"
Frequency of course Each semester	**Duration** The module can be completed in one semester
Language English or German	**Maximum number of students** None
Module coordinator Dean of Studies for Mathematics	

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7102: Research activities at mathematical conferences

Learning objectives

a) Participation in external scientific conferences in the research area
b) Review of scientific lectures at mathematical conferences
c) Preparation of a specialist lecture to present own results at a conference outside of Göttingen

Competencies

a) Acquisition of more advance skills in scientific appraisal and discourse within the framework of academic events of research-based relevance to the candidate's own research area
b) Presentation of own research results to a specialist audience

Scope of the module

3 C / 4 WLH

Workload in hours: 90
Attendance in hours: 28
Conference in hours: 28
Self study in hours: 36

Courses and examinations

a) Advance graduate seminar
b) External block course (conference)

Performance record prerequisites:

- Student lecture (approx. 60 minutes) and discussion

WLH individual

a) 2 WLH
b) 2 WLH

Options Compulsory module	**Qualifications for entry** None
Reassessment Twice	**Applicability** Doctoral degree course "Mathematical Sciences"
Frequency of course Each semester	**Duration** The module can be completed in one semester
Language English or German	**Maximum number of students** None

Module coordinator
Dean of Studies for Mathematics

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7201: Advanced studies in the research area

Learning objectives

a) Acquisition of advanced mathematical contents in the area of specialisation
b) Knowledge of the systematic structure of a research area with direct relevance to the dissertation topic

Competencies

a) Command of the methodologies typically applied in the research areas in the order to solve problems in the research area
b) Ability to design solution strategies and to present solutions in problems typical of the research area

Scope of the module

6 C / 6 WLH

Workload in hours: 180
Attendance in hours: 56
Exercises in hours: 28
Self study in hours: 96

Courses and examinations

- Lecture
- Exercises

Performance record prerequisites:

- Oral examination (approx. 20 minutes)

WLH individual

- 4 WLH
- 2 WLH

Options
Compulsory module

Qualifications for entry
None

Reassessment
Twice

Applicability
Doctoral degree course "Mathematical Sciences"

Frequency of course
Each semester

Duration
The module can be completed in one semester

Language
English or German

Maximum number of students
None

Module coordinator
Dean of Studies for Mathematics

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7202: Advanced studies in the research area

Learning objectives

a) Acquisition of advanced mathematical contents in the area of specialisation
b) Knowledge of the systematic structure of a research area with direct relevance to the dissertation topic

Competencies

- Command of essential methodologies in the area of specialisation
- Ability to classify results in own research area within a broader context

Scope of the module

3 C / 4 WLH

Workload in hours: 90
Attendance in hours: 28
Exercises in hours: 28
Self study in hours: 34

Courses and examinations

- Lecture
- Exercises, alternatively course

Performance record prerequisites:

- Oral examination (approx. 20 minutes)

WLH individual

- 2 WLH
- 2 WLH

Options Compulsory module	**Qualifications for entry** None
Reassessment Twice	**Applicability** Doctoral degree course "Mathematical Sciences"
Frequency of course Each semester	**Duration** The module can be completed in one semester
Language English or German	**Maximum number of students** None

Module coordinator
Dean of Studies for Mathematics

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7203: Extended studies in addition to the research area

Learning objectives

a) Expansion on mathematical skills in the area of specialisation
b) Expansion on knowledge of the systematic structure of a research area with direct relevance to the dissertation topic

Competencies

- Command of an expanded methodical repertoire in the area of specialisation
- Ability to classify results in own research area within a broader context

Scope of the module

3 C / 4 WLH

Workload in hours: 90
Attendance in hours: 28
Exercises in hours: 28
Self study in hours: 34

Courses and examinations

- Lecture
- Exercises, alternatively course

Performance record prerequisites:

- Oral examination (approx. 20 minutes)

WLH individual

- 2 WLH
- 2 WLH

Options Compulsory module	**Qualifications for entry** None
Reassessment Twice	**Applicability** Doctoral degree course "Mathematical Sciences"
Frequency of course Each semester	**Duration** The module can be completed in one semester
Language English or German	**Maximum number of students** None

Module coordinator
Dean of Studies for Mathematics

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7301: Accompanying course for familiarisation with a research area

Learning objectives

- Acquisition of summarised knowledge of essential literature within an active research area

Competencies

- Advanced methodical competency for the treatment of current research results
- The ability to produce current research results on the basis of critical study of recent specialist literature

Scope of the module

3 C / 2 WLH

Workload in hours: 90
Attendance in hours: 28
Self study in hours: 62

Courses and examinations

- Course (2 WLH)

Performance record prerequisites:

- Lecture (about 60 minutes) and discussion

WLH individual

- 2 WLH

Options
Compulsory module

Qualifications for entry
None

Reassessment
Twice

Applicability
Doctoral degree course "Mathematical Sciences"

Frequency of course
Each semester

Duration
The module can be completed in one semester

Language
English or German

Maximum number of students
None

Module coordinator
Dean of Studies for Mathematics

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7302: Accompanying course on the scientific processing mathematical questions

Learning objectives

- Expansion of the methodical repertoire for solution strategies to process mathematical problems

Competencies

- The ability to formulate mathematical problems and describe adequate solution strategies
- The ability to communicate ideas for solutions and difficulties

Scope of the module

3 C / 2 WLH

Workload in hours: 90
Attendance in hours: 28
Self study in hours: 62

Courses and examinations

- Advance graduate seminar

Performance record prerequisites:

- Lecture (about 60 minutes) and discussion

WLH individual

- 2 WLH

Options
Compulsory module

Qualifications for entry
None

Reassessment
Twice

Applicability
Doctoral degree course "Mathematical Sciences"

Frequency of course
Each semester

Duration
The module can be completed in one semester

Language
English or German

Maximum number of students
None

Module coordinator
Dean of Studies for Mathematics

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7303: Accompanying course on the documentation of mathematical questions

Learning objectives

- Development of a personal writing style for scientific work, oriented towards the appropriate standards of adequate scientific work and the format designed for specialised mathematical sciences

Competencies

- The ability to formulate mathematical problems and describe corresponding solution strategies
- The ability to document the results of mathematical research
- Knowledge of the rules of good scientific practice

Scope of the module

3 C / 2 WLH

Workload in hours: 90
Attendance in hours: 28
Self study in hours: 62

Courses and examinations

- Advance graduate seminar

Performance record prerequisites:

- Lecture (about 60 minutes) and discussion

WLH individual

- 2 WLH

Options
Compulsory module

Qualifications for entry
None

Reassessment
Twice

Applicability
Doctoral degree course "Mathematical Sciences"

Frequency of course
Each semester

Duration
The module can be completed in one semester

Language
English or German

Maximum number of students
None

Module coordinator
Dean of Studies for Mathematics

Georg-August-Universität, Göttingen
Doctoral degree course "Mathematical Sciences"
P.Mat.7901: Key qualification for university teaching

Learning objectives

a) The ability to communicate mathematical contents to first-semester students and to lead a heterogeneous study group
b) Competent deployment of various teaching methods and visualisation technologies
c) Confident manner

Competencies

- Rhetorical and presentation skills
- Teamwork skills (in particular the ability to motivate and a sure hand in dealing with conflict situations)
- Time management
- Intercultural communication if necessary

Scope of the module

3 C / 2 WLH

Workload in hours: 90
Attendance in hours: 28
Self study in hours: 62

Courses and examinations

- Exercises

Performance record prerequisites:

- Teaching of a practice session (approx. 90 minutes)

WLH individual

- 2 WLH

Options
Compulsory module

Qualifications for entry
None

Reassessment
Twice

Applicability
Doctoral degree course "Mathematical Sciences"

Frequency of course
Each semester

Duration
The module can be completed in one semester

Language
English or German

Maximum number of students
None

Module coordinator
Dean of Studies for Mathematics