Criteria for Award of Postgraduate Degrees in Mathematics

Article 1 The Requirements for the Study and Training Process of Postgraduates in Mathematics is formulated upon discussion and decision by the Degree Subcommittee of the Mathematics Department pursuant to the Implementing Regulations of USTC for Award of Master's and Doctoral Degrees and the spirit of the relevant instructions of USTC on the training of postgraduates.

Article 2 Requirements for the Study and Training Process of Doctoral Candidates in Mathematics

2.1 Course requirements for doctoral candidates in the field of specialization: The course of study of a doctoral candidate must meet the specific doctoral course requirements of the field of specialization in the training program.

2.2 A doctoral candidate should actively participate in international and domestic academic conferences and talks during his or her study to improve his or her capacity for academic research and communication.

2.3 In addition to obtaining the necessary course credits, a doctoral candidate should have the capacity to engage in original researches independently, complete the dissertation on his/her own under the guidance of the Supervisor, and make innovative academic achievements.

2.4 Evaluation of dissertation prospectus: A doctoral candidate should make a case for his or her dissertation topic and research approach, as well as prepare a dissertation prospectus. The prospectus for a doctoral dissertation should be scheduled by the Supervisor according to the research progress of the doctoral candidate, and should generally be completed by the third semester upon qualifying as a doctoral candidate, or by the fourth semester at the latest. The review committee should be composed of three to five professors (or experts with an equivalent professional title) of the discipline or a relevant discipline, to listen to and evaluate the content of the prospectus of the doctoral candidate.

Article 3 Requirements for the Doctoral Program in Mathematics - Duration, Credits and Research Achievements

3.1 The duration of a successive postgraduate and doctoral program is 5-6 years for a candidate who passes the doctoral qualifying examination. Prior to applying for a doctoral degree, the applicant should have obtained a total of at least 45 credits (including 11 credits for compulsory courses in English and Politics, 4-5 basic courses in Mathematics, at least 4 credits for courses in the doctoral field of specialization, and 2o credits for the dissertation prospectus; the weighted average score of the basic courses in Mathematics should be at least 75).

3.2 The duration of the doctoral program should be 3-4 years for a candidate who holds a master's degree and passes the doctoral qualifying examination of USTC. Prior to applying for a doctoral degree, the applicant should have obtained a total of at least 10 credits (including4 credits for the compulsory courses in English and Politics, at least credits for courses in the doctoral field of specialization, and 2 credits for the dissertation prospectus).

3.3 Prior to applying for a doctoral degree, a candidate should have at least two academic papers (related to the dissertation) published or accepted for publication in authoritative foreign or domestic journals (recognized by the degree sub-committee of the department) with USTC as the first signed institution (at least one paper in any EI journals or any JCR English journals, and one paper in a core journal (see Annex)); or one academic paper (related to the dissertation) published or accepted for publication in any high-level professional mathematics journals (CAS Q1 or Q2) (recognized by the Degree Sub-Committee) with USTC as the first signed institution.

3.3.1 For an academic paper published with its authors in alphabetical order and without a corresponding author, the first achiever institution should be USTC, and the same paper may only be used for one candidate to apply for the degree.

3.3.2 For an academic paper published with its authors ranked by their contribution, the candidate is required to be the first achiever (first author) of at least one paper. Any academic paper published with the doctoral candidate as the co-first author (second or after without counting the Supervisor) should not be recognized.

3.3.3 The academic achievements of an interdisciplinary candidate should be recognized with reference to the criteria of the related discipline.

3.4 The international conference paper used for degree application by a doctoral candidate should be retrievable in the EI, and any academic paper published with the doctoral candidate as the co-first author (second or after without counting the Supervisor) should not be recognized.

3.5 From June 2020, the same Criteria should be applied to international doctoral candidates regardless of the time of their enrollment.

3.6 A doctoral candidate should not change the authors' order and the signing institution of any accepted paper used for degree application before it is officially published; otherwise, serious action will be taken and even the degree will be revoked.

3.7 Doctoral Qualifying Examination

A master candidate in mathematics may qualify for the doctoral program upon passing the doctoral qualifying examination, interview, and supervisor selection. In particular, the candidate must pass the qualifying examination within the first two years after enrollment.

The qualifying examination is divided into 8 research fields: pure mathematics, mathematical physics, Cryptographic coding and information security, applied mathematics, operations research and cybernetics, computational mathematics, biomathematics, and probability theory and mathematical statistics. According to the field of research and the Supervisor's requirements, the candidate must pass the examinations of at least two subjects.

Examination Requirements:

Pure mathematics: analysis, algebra, geometry (2 out of 3);

Mathematical physics: analysis, algebra, geometry, quantum mechanics (2 out of 4);

Cryptographic coding and information security: algebra, (combinatorics and graph theory, finite fields and number theory (1 out of 2));

Applied mathematics: combinatorics and graph theory, (analysis, algebra (1 out of 2));

Operations research and cybernetics: comprehensive applied mathematics (analysis, algebra, geometry, numerical computation (1 out of 4));

Computational mathematics: numerical computation (analysis, algebra, geometry, comprehensive applied mathematics (1 out of 4));

Biomathematics: analysis (algebra, geometry, numerical computation, comprehensive applied mathematics (1 out of 4));

Probability theory and mathematical statistics: Foundations of modern probability, advanced mathematical statistics, analysis (2 out of 3);

Note: Please refer to the introduction to the doctoral qualifying examination of the School of Mathematical Sciences for the requirements and scope of the subjects.

Article 4 The duration of the master's program in Mathematics is 2-3 years, and an applicant should meet one of the following prerequisites:

4.1 The candidates for the 2-year program are not required to publish any academic paper but should have obtained at least 37 credits (including 7 credits for compulsory courses in English and politics, three to four basic courses in Mathematics, and 2 credits for the dissertation prospectus; the weighted average score of the basic courses in Mathematics should be at least 75);

4.2 The candidates for the 3-year program should have obtained at least 35 credits (including 7 credits for compulsory courses in English and politics, three to four basic courses in Mathematics, and 2 credits for the dissertation prospectus; the weighted average score of the basic courses in Mathematics should be at least 75); and have at least one academic paper (related to the thesis) published or accepted by a journal recognized by the degree sub-committee of the department with USTC as the first signed institution.

4.2.1 For an academic paper published with its authors in alphabetical order and without a corresponding author, the first achiever institution should be USTC, and the same paper may only be used for one candidate to apply for the degree.

4.2.2 For academic papers with the authors ranked by contribution , the candidate is required to be the first achiever (first author) of at least one paper (without counting the Supervisor) with USTC as the first achiever institution.

4.2.3 The international conference paper a master's candidate uses for degree application should be collected in the proceedings of the conference with an ISBN number.

4.2.4 The academic achievements of an interdisciplinary candidate should be recognized with reference to the criteria of the related discipline.

4.2.5 Any academic paper published with the candidate as the co-first author (second or after without counting the Supervisor) should not be recognized.

Article 5 These requirements and guidelines take effect from September 1, 2020.

Catalog of Domestic Journals (those marked with an asterisk (*) are for doctoral candidates)

Serial Number	The Title of Journal	Sponsor
1	＊数学学报	中国数学会
2	＊数学学报 A 辑	复旦大学
3	＊数学学报 B 辑（英文版）	复旦大学、中科院数学与系统科学研究院
4	＊应用数学学报	中国数学会
5	数学研究与评论	大连理工大学
6	＊计算数学	中科院数学与系统科学研究院
7	＊数学进展	中国数学会
8	控制理论与应用	华南理工大学、中科院数学与系统科学研究院
9	＊系统科学与数学	中国数学会、中科院数学与系统科学研究院
10	高校应用数学学报	浙江大学、中国工业与应用数学学会
11	＊数学物理学报	中科院武汉物理与数学研究所
12	高等学校计算数学学报	南京大学
13	数值计算与计算机应用	中科院计算数学与科学工程计算研究所
14	＊运筹学杂志	中国运筹学会
15	数学杂志	武汉大学、湖北省数学会、武汉数学会
16	数理统计与管理	中国现场统计研究会
17	＊应用概率统计	中国数学会、概率统计学会
18	应用数学	华中科技大学
19	＊计算物理	中国核学会
20	＊数学季刊	河南大学
21	数理统计与应用概率	北京工业大学应用数学系
22	数学的实践与认识	中科院数学与系统科学研究院
23	＊生物数学学报	中国数学会生物数学学会
24	偏微分方程	郑州大学数学研究所
25	逼近论及其应用	北京大学、南京大学
26	代数集刊	中科院数学与系统科学研究院
27	＊组合年刊	南开组合数学研究中心
28	微分方程年刊	福州大学
29	军事运筹学	中国军事运筹学会
30	军事系统工程	中国军事系统工程学会
31	东北数学	吉林大学
32	数学研究	厦门大学
33	人类工效学	中国人类工效学会
34	＊中国科学	中国科学院
35	＊数学前沿	Springer

Serial Number	The Title of Journal	Sponsor
36	＊中国科学技术大学学报	中国科学技术大学
37	＊运筹与管理	中国运筹学会

This English version of *Criteria for Award of Postgraduate Degrees of University of Science and Technology of China (USTC)* is for reference only, subject to the 2020 Chinese version.