

National Chiao-Tung University  
Department of Management Science

**Policies and Procedures of Ph.D. Program**

Approved September 15, 1999, by the 1<sup>st</sup> Departmental Affairs Meeting, fall semester, academic year 1999-2000  
Revised December 8, 2004, by the 3<sup>rd</sup> Departmental Affairs Meeting, fall semester, academic year 2004-05  
Revised September 28, 2005, by the 1<sup>st</sup> Departmental Affairs Meeting, fall semester, academic year 2005-06  
Revised April 12, 2006, by the 2<sup>nd</sup> Departmental Affairs Meeting, spring semester, academic year 2005-06  
Revised September 27, 2006, by the 1<sup>st</sup> Departmental Affairs Meeting, fall semester, academic year 2006-07  
Revised May 5, 2009, by the Departmental Affairs Meeting (correspondence vote), spring semester, academic year  
Revised April 21, 2010, by the 2<sup>nd</sup> Departmental Affairs Meeting, spring semester, academic year  
Revised April 20, 2011, by the 2<sup>nd</sup> Departmental Affairs Meeting, spring semester, academic year 2010-11  
Revised April 23, 2012, by the correspondence survey of the 2<sup>nd</sup> Departmental Affairs Meeting, spring semester,  
academic year 2011-12

- I. Policies and procedures stated herein are proposed in accordance with the “Master’s and Ph.D. Degree Awarding Regulations” of National Chiao-Tung University (NCTU) to provide a study guide and maintain academic standards for the doctoral students (including both regular and part-time students, same as below) of the Department of Management Science (DMS, hereafter the Department) at NCTU.
- II. Full-time doctoral students are required to complete the degree within two to seven years while part-time students can have one additional year, i.e. within two to eight years.
- III. NCTU students who meet the admission requirements of the direct-Ph.D. program may apply to study in the direct-Ph.D. track by following DMS’s “Regulations for Direct-Ph.D. Program.” The Ph.D. Program Committee should assess students’ qualifications and submit the results to the Departmental Affairs Meeting for approval. The detailed procedures and requirements should abide by the regulations of “NCTU Policies on the Application of Master’s Students to Direct-Ph.D. Program.”
- IV. Doctoral students who study in other NCTU departments/institutes may transfer to the Ph.D. program of the DMS if they acquire the approval of their original departments/institutes and at least two recommendations from the faculty members of the DMS. The Ph.D. Program Committee shall assess students’ qualifications and submit the results to the Departmental Affairs Meeting for approval. If students are accepted, they should start the Ph.D. program of the Department in the following academic year. The year(s) of their stay in the other department/institute will not be counted toward the limit of the

study period required by the Department.

- V. The research areas of DMS doctoral students include but are not limited to the following nine sectors: Organizational Theories/Behavior, Strategic Management, Marketing Management, Financial Management, Operations Management, Human Resources Management, Information Management, Technology Management, and Decision Science. Each sector may recruit students separately though cross-sector research is strongly recommended.
- VI. All doctoral students must take at least two semesters of Ph.D and have completed four pre-requisite courses namely Economics, Accounting, Statistics, and Management. Regarding the elective professional courses, students should take at least one course each from any six research areas listed above (Article V) and at least three courses on methodology and related areas, along with three courses in their major field of research. In addition to the courses aforementioned, students should also complete at least three (9 credits) Ph.D.-level professional courses. (All Ph.D.-level professional courses offered by NCTU College of Management are honored by the Department and their credits can be counted towards the Department's requirement of "Ph.D.-level professional courses.") All the courses mentioned above should be successfully completed before taking the Ph.D. Degree Examination. If students have completed any aforementioned courses (except Ph.D.-level professional courses) before entering the program, they may apply to waive the courses prior to the deadline of the course add-and-drop period in the very first semester of their study but no credits will be counted towards graduation. Waivers applied after this will not be accepted.
- VII. Doctoral students should get approval from the department chair, the PhD program committee, or their advisor before taking any courses.
- VIII. Ph.D. Qualifying Examination is held by the Ph.D. Program Committee of the Department once a semester in early fall and spring, respectively. The examination consists of two parts. In the first part, students must pass two subject tests on the methodology and its related areas within the first two years of their study (including leave of absence) or be dismissed from school. In the second part, students must choose and be tested on one of the nine research sectors mentioned above (Article V). Doctoral students must pass their qualifying exam within the first three years of their study (including leave of absence) or be dismissed from NCTU.
- IX. Doctoral students may choose their dissertation advisor after passing the first part of the qualifying exam and must report to the department their choice of the dissertation advisor within six months upon passing both parts of the exam to get approval from the Executive Meeting of the Management College. Only a DMS full-time faculty with assistant professorship or above can serve as a dissertation advisor. If a student is co-advised, one of the co-advisors must have full-time assistant professorship or above in the Department and the appointment must be approved by the Ph.D. Program Committee of the Department. The advisor or co-advisor who is from the Department should organize and be the convener of the Dissertation Advising

and Reviewing Committee (hereafter the Dissertation Committee), which must be composed of at least three members. The Dissertation Committee is responsible for supervising and advising the student's research. In case the dissertation advisor needs to be changed, the student should get consent from both the previous and the new advisors and report the change to the Ph.D. Program Committee. If any arguments arise, the final justification should be made by the Departmental Affairs Meeting. Same procedures should be followed for the change of the dissertation committees. Once the choice of a dissertation advisor is made, the student should take "Individual Study" course at least once a year unless s/he takes leave for the whole academic year, studies abroad as an exchange student, does research overseas, or is sure to graduate in that particular academic year.

- X. A DMS faculty member can only advise two new doctoral students admitted each academic year. One faculty can advise 5 doctoral students at the most (including student(s) on leave) in any academic year. However, faculty members who have published papers on the journals listed on Financial Times or UT Dallas, or with the impact factor above 1.5 during the past three years can take up to seven doctoral students at most.
- XI. Doctoral students who have studied in the program for at least two years, completed all required courses (excluding the courses waived) and received 36 credits (78 credits for Direct-Ph.D. program students, excluding the credits of pre-requisite or seminar courses) may apply for the Ph.D. candidacy upon the recommendation of the Dissertation Committee.
- XII. Doctoral students must pass the qualifying exam and have a solid research direction before applying for an oral defense for the dissertation proposal. The Ph.D. Program Committee shall administrate the oral exam and make it open to public. This oral exam committee includes the committee members of a student's Dissertation Advising and Reviewing Committee plus one or two professors recommended by the Ph.D. Program Committee in the related research area(s). Students must pass the dissertation proposal defense within the first four years of study (including leave of absence) or be dismissed from school.
- XIII. Upon approval by the Department, international students can take IMBA courses offered by the College of Management and receive credits equaling those of the Department.
- XIV. Doctoral students should fulfill the following requirements before applying for the Ph.D. degree examination:
  - 1. Publish their research in well-known journals under the name of the Department and NCTU (one academic paper on SSCI or SCI journals, or two papers on the journals recognized by the Ph.D. Program Committee, with the proof of a reprint or photocopy or acceptance letter of the paper.).
  - 2. Completed the Ph.D. English training course(s) offered by the Language Teaching and Research Center, NCTU or pass one of the following English proficiency test requirements: score 80 or above in TOEFL-iBT (or the equivalent in other TOEFL tests), attain a high-intermediate (or above) level in the General English Proficiency Test, or score 750 or above in TOEIC.

XV. Oral examination will be the primary format of the Ph.D. degree examination and the following rules shall be enforced:

1. The Ph.D. Degree Examination Committee consists of five to nine members who are experts on the candidate's research fields and may or may not be NCTU faculty. They will be recommended by the Department to NCTU's President, who will then invite and appoint the members for this function. Both NCTU committees and non-NCTU committees should count for at least one third of all members in the committee. All committee members should also meet one of the following criteria:
  - a. Being a Professor now or before
  - b. An Academician or being a Researcher of Academia Sinica now or before.
  - c. Being an Associate Professor or an Associate Researcher of Academia Sinica now or before, with excellent academic performance
  - d. A Ph.D. with significant academic achievements
  - e. An expert in a rare or specialized field, with excellent academic or professional achievements

The qualifications of Items *c* to *e* listed above will be determined by the Departmental Affairs Meeting. The doctoral student's spouse and one to third degree relatives are not allowed to serve as the dissertation committees.

2. The defense will be oral and public. The defense schedule, venue, and the dissertation title shall be announced to the public in advance.
3. The student and at least five committee members must be present throughout the whole examination.
4. Apart from the student's advisor, there must be at least one full-time DMS faculty present during the dissertation defense as an exam committee. If there is no DMS faculty available, an appropriate full-time faculty of the College of Management should be invited and present.
5. The student passes the degree examination if the average scores of all committees members reach 70 or above (with 100 as the perfect score). But, if one third or more of the present committees marks "fail" for the exam, then the student fails the exam.

XVI. Students who pass the Ph.D. degree examination will be awarded the degree of Doctor of Philosophy in Management Science of NCTU. Students' major research sector will be stated in the diploma as well. If a student has not passed the degree examination or completed the required coursework within the study-period limit, s/he shall be dismissed from NCTU.

XVII. Ph.D. dissertations (including abstracts) should be written principally in Chinese and must be prepared by following the regulations of NCTU Degree Thesis and Dissertation Format. The electronic dissertation, including the abstract, should be upload onto internet in accordance with polices of the Filing System of Electronic Thesis and Dissertations in NCTU Library within one month after passing the degree examination. In addition, three hard copies of the dissertation

should be submitted – one for NCTU Library and the other two for the Office of Academic Affairs to be sent to other organizations specified by MOT. The number of copies for filing in the Department will be decided by the Department.

XVIII. Items not stated herein are subject to the NCTU Master's and Ph.D. Degree Awarding Regulations.

XIX. The future revision of the policies and procedures will be applicable to doctoral students who are admitted to the Ph.D. program in the following academic year after the revision is approved.

XX. These policies and procedures have been approved by the Departmental Affairs Meeting, confirmed by the Curriculum Committees of the College of Management and the NCTU, and validated by the Academic Affairs Meeting of the university. The same procedure will be applied for future revisions.

## < **The Ph.D. Program Regulations** >

1. The research fields for the program include (but are not limited to) ‘Organization Theories and Organizational Behavior’, ‘Marketing Management’, ‘Strategic Management’, ‘Financial Management’, ‘Operations Management’, ‘Human Resource Management’, ‘Information Management’, ‘Technology Management’, and ‘Decision Science’. Interdisciplinary research is strongly encouraged.
2. Students are required to complete two semesters of the ‘Seminar on Thesis’ course. The prerequisites include ‘Economics’, ‘Accounting’, ‘Statistics’, and ‘Introduction to Management’. Students are required to complete three fundamental courses on research methodology. Students are required to complete six elective courses for the nine specified fields mentioned above (one course for one field), and at least three concentration courses related to her/his major research field. These courses include those offered by the institute as well as those offered by the IMBA program of the College of Management. Students who have completed prerequisites or electives prior to enrolment may apply for waiver.

## Curriculum table

1. prerequisites : Economics 、 Accounting 、 Statistics 、 Introduction to Management
2. seminars : Seminar on Thesis 、 independent study
3. elective courses :

fields	fundamental courses	advance courses
Strategic Management	Strategic Management 、 Managerial Economics	Technology Management 、 Knowledge Management 、 Intellectual Property Law and Management 、 Industrial Economics 、 Innovation Management 、 R&D Management 、 International Business 、 Neo-Confucian Business and Management 、 Analysis of Management Cases 、 Economic Analysis of Law 、 Change Management 、 Financial and Economic Laws 、 Business Negotiation 、 Strategic Management thesis readings 、 Entrepreneurs and Entrepreneurship 、 Intellectual Property Laws 、 Industry Analysis and strategy Planning 、 Strategic Marketing 、 Macro-Strategic Management
Organization Theories and Organizational Behavior	Organization Theory 、 Organizational Behavior	Leadership 、 Organizational Design 、 Organizational Change 、 Business Ethics 、 Japanese Business and Management 、 Seminar on Organizational Behavior 、 Industrial Relations 、 Career Development 、 Analysis of Management Cases 、 Habitual Domains Decision Making 、 Change Management
Human Resource Management	Human Resource Management	Human Resources Seminar 、 Employee Training and Development 、 Personnel Recruitment and Selection 、 Salary Raise Management 、 Industrial Relations
Marketing Management	Marketing Theory	Marketing Theory 、 Marketing Research 、 High-Level Marketing Research 、 Consumer Behavior 、 Marketing Engineering 、 Internet Marketing 、 Branding Competition 、 Marketing Strategy 、 Price Theory 、 New Venture Venture Capital Investment 、

		Integrated Marketing Communication 、 Introduction to Advertising 、 Market Survey Methods 、 Global Marketing 、 Services Management 、 SOC Marketing Management 、 Retailing 、 International Marketing 、 Marketing Analysis 、 International Business 、 Strategic Marketing 、 Special topics on Consumer Behavior 、 Marketing and Competitive Strategy 、 Innovation and Marketing 、 Leisure Industry Marketing 、 Special Topics in Marketing Research 、 Business Skills and Technology Business Model
Financial Management	Financial Management	Financial Theory 、 Financial Statement Analysis 、 Advanced Financial Management 、 Financial Econometrics 、 Financial Engineering 、 Financial Markets 、 Banking Management 、 Investment Banking 、 Investments 、 Futures and Options 、 Securities market management and practice 、 Project Evaluation 、 Decision analysis for Capital Investment 、 Advances in Financial Econometrics 、 Financial Strategies and Management 、 Cost Accounting 、 Special Topics in Financial Economics 、 Portfolio Analysis and Management 、 Business Valuation 、 Investment Analysis 、 Financial Planning and Analysis 、 Managerial Accounting 、 Corporate Finance Seminar 、 China Economy Studies 、 Theory of Derivatives
Information Management	Information Management	Electronic Commerce 、 Internet Marketing 、 Decision Support Systems 、 Expert Systems 、 Neural Networks and Information Management 、 Electronic Commerce Systems 、 Development Strategy for the Energy Industry
Operations Management	Operation Management	Supply Chain Management 、 Total Quality Management 、 Project Management 、 Services Management 、 Dynamic Programming 、 Econometrics for Supply Chains
Technology Management	Technology Management	Innovation Management 、 International Management Topics 、 Business Management 、 Technological Innovation and R&D Management 、 Valuation of Intellectual Property 、 Issues on Global

		High-Tech Competition and Management、Electronic Commerce、Management of e-Business、Electronic Commerce Systems、Technology strategy and innovatiion
Decision Science	Decision Science	Principles of Decision-making、Operation Management、Total Quality Management、Project Management、Services Management、Environmental Economics and Management、Structural Equation Modeling、Game Theory、Performance Assessment、Multivariate Analysis、Case Study Methods in Management Research、Managerial Decision-Making Analysis、System Topics、International Management Workshop、Fuzzy Theory and Its Decision-Making、Multi-Objective Analysis、Portfolio Theory、Multiple Criteria Decision Making、Hierarchical Linear Models、Scheduling Theory and Applications、Combinatorial Optimization

research methodology	Research Methods、Econometrics、Operations Research、Statistical Methods and Data Analysis、Multivariate Analysis、Quantitative Methods、Mathematical Statistics、Management Mathematics、Experimental Design、Neural Networks、Forecasting and Time Series、Regression Models and Applied SAS System、Thematic Analysis of Linear Structural Model、Structural Equation Modeling、Intro. to Systems Approach、Optimization Theory、Numerical Partial Differential Equations、Stochastic Processes、Methods：Case Analysis and Game Theory、Numerical Methods in Finance、Economics of Information Technology、Technology Forecasting & Impact Assessment、Financial Econometrics、Research on Advanced Educational Statistics、Business survey and research、Financial Mathematic、Qualitative Research Methodology、Seminar on Marketing Research (I)、Fuzzy Sets and Its Applications、Multiple Criteria Decision Making:Theory and Application、Research method for problem solving、Data Mining Research & Practice、Applied Econometrics、Research Methods and Decision Analysis、Advanced Algorithms、Special Topics in Statistical Software
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2011/4/27 Update