

Course Structure for Ph. D Program
Department of Geography
National Taiwan Normal University

| Adaptive to Class of | Required Credit(s) | Elective Credit(s) | Free Elective Credit(s) | Minimum Total Credits for Graduation |
|----------------------|--|--|--|--|
| 115 | General Program 8.0 GPE Program 8.0 | General Program 16.0 GPE Program 16.0 | General Program 0.0 GPE Program 0.0 | General Program 24.0 GPE Program 24.0 |

Note: The first alphabet "E" on the course name refers to the course in English as a medium of instruction

I. Required Courses: 8.0 credits are required

| Course Code | Course Name | Credit(s) | Credit Unit | | Note |
|-------------|-------------------------------------|-----------|--------------|-------------------|--|
| | | | Lecture Hour | Lab/Practice Hour | |
| GED0080 | 1 E Seminar on Geography | 1.0 | 1.0 | 0.0 | This course must be retaken with a passing score for 2 times |
| GED0081 | 2 E Field Work in Geography | 1.0 | 1.0 | 0.0 | This course must be retaken with a passing score for 2 times |
| GEC8079 | 3 E Seminar on Geographical Studies | 2.0 | 2.0 | 0.0 | This course must be retaken with a passing score for 2 times |

II. Elective Courses: 0.0 credit is required

III. Courses Offered to Students in Different Divisions

A-1. Required Course for General Program, 0.0 credit is required

A-2. Elective Course for General Program, 16.0 credits are required

| Course Code | Course Name | Credit(s) | Credit Unit | | Note |
|-------------|--|-----------|--------------|-------------------|------|
| | | | Lecture Hour | Lab/Practice Hour | |
| GEC0002 | 1 Landscape and Land Use Planning | 2.0 | 2.0 | 0.0 | |
| GEC0003 | 2 Theory and Practice in Geography Education | 2.0 | 2.0 | 0.0 | |
| GEC0009 | 3 Studied in Geography of Taiwan | 2.0 | 2.0 | 0.0 | |
| GEC0011 | 4 Studies in Settlement Geography | 2.0 | 2.0 | 0.0 | |
| GEC0013 | 5 Studies in Tourism and Recreation Geography | 2.0 | 2.0 | 0.0 | |
| GEC0015 | 6 Studies in Landscape | 2.0 | 2.0 | 0.0 | |
| GEC0017 | 7 Application of Computer Network in Geography | 2.0 | 2.0 | 0.0 | |
| GEC0022 | 8 Quantitative Technique in Geography Studies | 3.0 | 3.0 | 0.0 | |
| GEC0023 | 9 Digital Elevation Model Analysis | 2.0 | 2.0 | 0.0 | |
| GEC0034 | 10 Studies in Agricultural Geography | 3.0 | 3.0 | 0.0 | |
| GEC0035 | 11 Studies in Political Geography | 2.0 | 2.0 | 0.0 | |
| GEC0037 | 12 Environmental Pollution and Management | 2.0 | 2.0 | 0.0 | |
| GEC0041 | 13 Studies in Taiwan Aboriginal Geography | 2.0 | 2.0 | 0.0 | |
| GEC0043 | 14 Studies in Human Geography of Taiwan | 2.0 | 2.0 | 0.0 | |
| GEC0044 | 15 Topics in Sedimentology | 2.0 | 2.0 | 0.0 | |
| GEC0049 | 16 Qualitative Methodologies and Thesis Writing | 2.0 | 2.0 | 0.0 | |
| GEC0054 | 17 E Urban Governance | 2.0 | 2.0 | 0.0 | |
| GEC0057 | 18 Space and Society | 2.0 | 2.0 | 0.0 | |
| GEC0058 | 19 Rural Geography and Rural Development | 2.0 | 2.0 | 0.0 | |
| GEC0059 | 20 E Studies in Feminist Geography | 3.0 | 3.0 | 0.0 | |
| GEC0062 | 21 The Theory of Space | 2.0 | 2.0 | 0.0 | |
| GEC0064 | 22 Studies in Regional Geography | 2.0 | 2.0 | 0.0 | |
| GEC0067 | 23 Environmental Monitoring and Assessment | 2.0 | 2.0 | 0.0 | |
| GEC0068 | 24 E Multivariate Analysis | 3.0 | 3.0 | 0.0 | |
| GEC0069 | 25 E Spatial Techniques | 3.0 | 3.0 | 0.0 | |
| GEC0070 | 26 Spatial Database System | 2.0 | 2.0 | 0.0 | |
| GEC0071 | 27 Catchment Environments | 3.0 | 3.0 | 0.0 | |
| GEC0072 | 28 E Global Change and Coastal Environment | 2.0 | 2.0 | 0.0 | |
| GEC0076 | 29 Thesis Writing in Geography | 3.0 | 3.0 | 0.0 | |
| GEC7001 | 30 Digital Photogrammetry | 3.0 | 3.0 | 0.0 | |
| GEC7002 | 31 Socio-Economic Geographic Information System | 2.0 | 2.0 | 0.0 | |
| GEC7003 | 32 Actor Network Theory and Post-Structuralist Geography | 2.0 | 2.0 | 0.0 | |
| GEC8001 | 33 Geographies of Consumption | 3.0 | 3.0 | 0.0 | |
| GEC8002 | 34 E Studies in Climate Change | 3.0 | 3.0 | 0.0 | |
| GEC8004 | 35 Studies in Food Geography | 2.0 | 2.0 | 0.0 | |
| GEC8005 | 36 Topics on Hydrology | 3.0 | 3.0 | 0.0 | |
| GEC8006 | 37 E Ecosystem Management | 3.0 | 3.0 | 0.0 | |
| GEC8008 | 38 Topics on Hazards and Environmental Transformation | 2.0 | 2.0 | 0.0 | |
| GEC8009 | 39 Monsoon Climate | 3.0 | 3.0 | 0.0 | |
| GEC8010 | 40 Climate Change Impact Assessment | 3.0 | 3.0 | 0.0 | |
| GEC8012 | 41 Resources Analysis and Management | 2.0 | 2.0 | 0.0 | |

| Course Code | Course Name | Credit(s) | Credit Unit | | Note |
|-------------|--|-----------|--------------|-------------------|------|
| | | | Lecture Hour | Lab/Practice Hour | |
| GEC8013 | 42 Watershed Assessment and Modeling | 3.0 | 3.0 | 0.0 | |
| GEC8014 | 43 Risk Society and Sustainable Development | 2.0 | 2.0 | 0.0 | |
| GEC8015 | 44 E Gender and Space | 2.0 | 2.0 | 0.0 | |
| GEC8017 | 45 E Urban Political Economy and Spatial Development | 3.0 | 3.0 | 0.0 | |
| GEC8018 | 46 Studies in Space of High-Tech Taiwan | 2.0 | 2.0 | 0.0 | |
| GEC8019 | 47 E Studies in Geographic Information System | 3.0 | 3.0 | 0.0 | |
| GEC8020 | 48 Cyber City Modeling | 2.0 | 2.0 | 0.0 | |
| GEC8021 | 49 Geosimulation | 3.0 | 3.0 | 0.0 | |
| GEC8022 | 50 Studies in Environmental Administration | 2.0 | 2.0 | 0.0 | |
| GEC8023 | 51 Studies in Cultural Geography | 2.0 | 2.0 | 0.0 | |
| GEC8024 | 52 Landscape Ecology | 2.0 | 2.0 | 0.0 | |
| GEC8025 | 53 Studies in Industrial Ecology | 2.0 | 2.0 | 0.0 | |
| GEC8026 | 54 Mitigation of and Adaptation to Climate Change | 3.0 | 3.0 | 0.0 | |
| GEC8027 | 55 E Studies in Political Ecology | 3.0 | 3.0 | 0.0 | |
| GEC8028 | 56 Spatial Decision Support System | 2.0 | 2.0 | 0.0 | |
| GEC8029 | 57 Critical Geography and Physical Environment | 2.0 | 2.0 | 0.0 | |
| GEC8030 | 58 Studies in Economic Geography | 3.0 | 3.0 | 0.0 | |
| GEC8031 | 59 Topics on Climatology | 2.0 | 2.0 | 0.0 | |
| GEC8032 | 60 E Topics on Geography of Everyday Life | 3.0 | 3.0 | 0.0 | |
| GEC8033 | 61 Phylogeography | 3.0 | 3.0 | 0.0 | |
| GEC8034 | 62 E Science Writing in English | 3.0 | 3.0 | 0.0 | |
| GEC8035 | 63 Analysis of Geographic Information | 2.0 | 2.0 | 0.0 | |
| GEC8036 | 64 Studies in Ethnogeography | 2.0 | 2.0 | 0.0 | |
| GED0003 | 65 Methodology of Geography | 2.0 | 2.0 | 0.0 | |
| GED0004 | 66 Topics in Geomorphology | 2.0 | 2.0 | 0.0 | |
| GED0010 | 67 Topics in Soil Geography | 2.0 | 2.0 | 0.0 | |
| GED0011 | 68 Topics in Biogeography | 2.0 | 2.0 | 0.0 | |
| GED0014 | 69 Topics in Agricultural Geography | 2.0 | 2.0 | 0.0 | |
| GED0022 | 70 Topics in Regional Geography | 2.0 | 2.0 | 0.0 | |
| GED0023 | 71 Topics in Hometown Geography | 2.0 | 2.0 | 0.0 | |
| GED0025 | 72 Topics in Applied Geography | 2.0 | 2.0 | 0.0 | |
| GED0027 | 73 Topics in Environmental Conservation | 2.0 | 2.0 | 0.0 | |
| GED0030 | 74 Topics in Linguistic Geography | 2.0 | 2.0 | 0.0 | |
| GED0031 | 75 Topics in Hydrogeology | 2.0 | 2.0 | 0.0 | |
| GED0082 | 76 Human Ecology | 3.0 | 3.0 | 0.0 | |
| GEC8037 | 77 E Applications of Geospatial Technology | 3.0 | 3.0 | 0.0 | |
| GEC8038 | 78 E Studies in Urban Geography | 3.0 | 3.0 | 0.0 | |
| GEC8039 | 79 Studies in Mobility and Space | 3.0 | 3.0 | 0.0 | |
| GEC8040 | 80 Studies in Geography of the Senses | 3.0 | 3.0 | 0.0 | |
| GEC8041 | 81 Cultural Geography of Tea in Taiwan | 3.0 | 3.0 | 0.0 | |
| GEC8042 | 82 Environment and Society | 3.0 | 3.0 | 0.0 | |

B-1. Required Course for GPE Program, 0.0 credit is required

B-2. Elective Course for GPE Program, 16.0 credits are required

| Course Code | Course Name | Credit(s) | Credit Unit | | Note |
|-------------|---|-----------|--------------|-------------------|------|
| | | | Lecture Hour | Lab/Practice Hour | |
| GEC0054 | 1 E Urban Governance | 2.0 | 2.0 | 0.0 | |
| GEC0059 | 2 E Studies in Feminist Geography | 3.0 | 3.0 | 0.0 | |
| GEC0069 | 3 E Spatial Techniques | 3.0 | 3.0 | 0.0 | |
| GEC0072 | 4 E Global Change and Coastal Environment | 2.0 | 2.0 | 0.0 | |
| GEC8002 | 5 E Studies in Climate Change | 3.0 | 3.0 | 0.0 | |
| GEC8006 | 6 E Ecosystem Management | 3.0 | 3.0 | 0.0 | |
| GEC8015 | 7 E Gender and Space | 2.0 | 2.0 | 0.0 | |
| GEC8017 | 8 E Urban Political Economy and Spatial Development | 3.0 | 3.0 | 0.0 | |
| GEC8019 | 9 E Studies in Geographic Information System | 3.0 | 3.0 | 0.0 | |
| GEC8027 | 10 E Studies in Political Ecology | 3.0 | 3.0 | 0.0 | |
| GEC8032 | 11 E Topics on Geography of Everyday Life | 3.0 | 3.0 | 0.0 | |
| GEC8034 | 12 E Science Writing in English | 3.0 | 3.0 | 0.0 | |
| GEC8037 | 13 E Applications of Geospatial Technology | 3.0 | 3.0 | 0.0 | |
| GEC8038 | 14 E Studies in Urban Geography | 3.0 | 3.0 | 0.0 | |

IV. Free Elective Credits

A Free Elective Credit for General Program, 0.0 credit is required

B Free Elective Credit for GPE Program, 0.0 credit is required