**熱帶農業暨國際合作 系(所) 博士班 課程與核心能力之關聯檢核表**

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| **核心能力**  **Core Capabilities** | **能力指標與核心素養**  **Capabilities Index and**  **Core Accomplishment** | **對應課程**  **Related Courses** | **檢核機制**  **Evaluation** |
| 1. 具熱帶農業動物或植物專業研究與管理能力。  Demonstration of the ability on R&D and management in animal or plant productions. | 1.具資訊處理編排能力。  Demonstrate organization and  handling of information.  2.具危機思考。  Demonstrate critical thinking  3.具團隊工作。  Demonstrate teamwork | 1.專題討論  Seminar  2.科學研究方法  Scientific Research Methods | 1.口頭發表  Oral Presentations  2.筆試  Written Exams |
| 2. 具獨立科學研究與創新能力。  Demonstration of the ability to conduct scientific research independently and innovatively. | 1.具計畫規劃及專業發展。  Demonstrate Program Planning Skills and Professional Development  2.具科學儀器控制、理論證實及實做知識。  Operate scientific equipment and demonstrate theory & practical knowledge  3.具討論及危機思考能力。  Demonstrate critical and creative thinking | 1.科學研究方法  Scientific Research Methods  2. 專題討論  Seminar  3.應用華語（1）  Applied Mandarin (1)  4. 應用華語（2）  Applied Mandarin (2) | 1.口頭發表  Oral Presentations  2.筆試  Written Exams |
| 3. 具研究發展與規劃執行國際合作計畫之知識與技能。  Demonstration of the knowledge and ability of R&D, planning and executing international cooperation projects. | 1.具發展研究計畫能力。  Demonstrate abilities to develop research projects  2.具計畫規劃整合能力。  Demonstrate ability to plan and integrate programs | 1.科學研究方法  Scientific Research Methods  2. 進階專技英文寫作  Advanced Scientific Writing  3. 專題討論  Seminar | 1.口頭發表  Oral Presentations  2.筆試與口頭發表  Written and Oral Exams |

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| 2. 具獨立科學研究與創新能力。  Demonstration of the ability to conduct scientific research independently and innovatively. | 具備獨立設計科學試驗，並分析資數之能力。  Demonstration of professionally knowledge in statistical analysis and experimental design to conduct and scientific research independently and innovatively.. | 1.試驗設計及數據分析  Experimental design and data analysis  2. 專題研究（1）  Special Research Project（1）  3. 專題研究（2）  Special Research Project（2） | 筆試  Written exams |
| 3. 具研究發展與規劃執行國際合作計畫之知識與技能。  Demonstration of the knowledge and ability of R&D, planning and executing international cooperation projects. | 具備以英文規劃執行國際合作計劃之能力。  Demonstration of the ability to use English proficiently in R&D, planning and executing international cooperation projects. | 1.試驗設計及數據分析  Experimental design and data analysis | 筆試皆以英文進行  Exams are all in English. |

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| 2. 具獨立科學研究與創新能力。  Demonstration of the ability to conduct scientific research independently and innovatively. | 1.團隊合作  Demonstrate team work.  2.具資訊處理編排能力。  Demonstrate ability of handling and organizing information.  3.具公眾演說及學術寫作能力。  Demonstrate skills in public speaking and academic writing. | 1.國際農業發展趨勢特論  Special Topics on Development Trends of International Agriculture  2. 博士論文  Dissertation  3. 農業政策與經濟特論  Special Topics on Agriculture Policies and Economics  4. 高等人力資源管理  Advanced Human Resource Management | 1.學生口頭報告  Student Presentations.  2.筆試及口試  Written and Oral Exams. |
| 3. 具研究發展與規劃執行國際合作計畫之知識與技能。  Demonstration of the knowledge and ability of R&D, planning and executing international cooperation projects. | 1.團隊合作。  Demonstrate Team work.  2.培養儀器操作技巧。  Develop skills in operating equipment.  3.具國際農業系統了解能力。  Demonstrate understanding of international agriculture systems.  4.具危機思考能力。  Demonstrate critical thinking. |  | 筆試及口試  Written and Oral Exams. |

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| 1. 具熱帶農業動物或植物專業研究與管理能力。  Demonstration of the ability on R&D and management in animal or plant productions. | 1.認知世界農糧食作物生產情形、供需概況及未來展望  Knowledge of world crop production, food supply and demand, and the future development  2.認識農業歷史、農藝作物特徵、生育情形、生產方式及生態角色  Understanding the development of agriculture, botany of food crops, crop growth and improvement, and agroecosystems  3.具備栽種一般農藝作物及園藝作物之基本技能  Ability to grow general agronomic and horticultural crops  4.認識各種作物、生產系統及影響作物之環境因子  Knowledge of basic principles of crop science: science of crop plants and soil, development of crop production, and environmental factors affecting crops  5.具備栽種糧食作物之基本技能  Ability to cultivate food crops  6.認識土壤與肥料之基本特性、功能及與作物之關係  Knowledge of soil science and fertilizers, their functions, and relationships with crop plants  7.具備分析土壤物理化學性質及肥料施用之技能  Skills in basic soil analysis and fertilizer application  8.具備植物保護之基本技能  Ability to protect plants  9.具備作物育種之基本技能  Ability to breed crops | 1. 高等蔬菜作物  Advanced Olericulture  2. 草坪生理及管理  Turf Physiology and Management  3. 蘭花學  Orchidology  4. 高等熱帶果樹  Advanced Tropical Fruits Science  5. 高等花卉學  Advanced Floriculture | 1.課堂答問  A＆Q in the class  2.筆試  Paper test  3.報告  Report  4.實際操作  Practice |
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| 3. 具研究發展與規劃執行國際合作計畫之知識與技能。  Demonstration of the knowledge and ability of R&D, planning and executing international cooperation projects. |  |  |  |

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| 2. 具獨立科學研究與創新能力。  Demonstration of the ability to conduct scientific research independently and innovatively. | 1. 具備分子工程操作技術   Operate to molecular engineering skill | 酵素與蛋白質工程學  Enzyme and Protein Engineering  基因表現系統  Genetic Expression System | 1.進行筆試檢視學生應具備的基本知識  Paper test for the knowledge  2.繳交書面報告檢視學生彙整相關資料能力  Evaluate term paper or final report students submitted  3.現場實際操作檢視學生繁養殖技術能力  Evaluate the techniques students learned in field |
| 3. 具研究發展與規劃執行國際合作計畫之知識與技能。  Demonstration of the knowledge and ability of R&D, planning and executing international cooperation projects. |  |  |  |

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| 1. 具熱帶農業動物或植物專業研究與管理能力。  Demonstration of the ability on R&D and management in animal or plant productions. | 1.具備動物類與魚類知識與技能  Demonstration of the ability to have knowledge on animals and fishery  2.具備動物類生產的能力  Demonstration of the ability to conduct round production of animals  3.具備昆蟲基礎知識  Demonstration of knowledge on  insects  4.具備微生物相關知識  Demonstration of microbiology  related knowledge | 高等魚類與漁業生物學  Advanced Fish and Fisheries Biology  乳牛繁殖學  Reproduction of dairy cattle  芻料營養評估  Forage Evaluation  乳牛哺乳學  Lactation and Milking of Dairy Cattle  肉牛生產學  Beef cattle production  乳牛牧草學  Grass for Dairy Cattle  單胃動物營養特論  Special Topics on Monogastric Animal Nutrition  高等昆蟲基礎學  Advanced Foundations in Entomology  真菌學特論  Special Topics on Mycology  高等昆蟲病理學  Advanced Insect Pathology | 1.進行筆試檢視學生學習成效  Classroom examination to evaluate the learning performance of the students  2.田間和實驗室實際操作檢視學生操作技術  Field and laboratory practices to evaluate the technical skills of the students  3.繳交書面報告檢視學生資料蒐集及彙整的能力  Written reports to evaluate students’ ability to collect and analyze data |
| 2. 具獨立科學研究與創新能力。  Demonstration of the ability to conduct scientific research independently and innovatively. |  |  |  |
| 3. 具研究發展與規劃執行國際合作計畫之知識與技能。  Demonstration of the knowledge and ability of R&D, planning and executing international cooperation projects. |  |  |  |