國立屏東科技大學 動物用疫苗國際學位專班 博士班課程規劃表(109學年度)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 學年 | 第一學年 | | | | | | 第二學年 | | | | | | 學分  小計 |
| 學期 | 第一學期 | | | 第二學期 | | | 第一學期 | | | 第二學期 | | |
| 類別 | 科目 | 永久碼 | 學分/ 時數 | 科目 | 永久碼 | 學分/ 時數 | 科目 | 永久碼 | 學分/ 時數 | 科目 | 永久碼 | 學分/ 時數 |
| 必修 | 專題討論 | 30039 | 1/2 | 專題討論 | 30039 | 1/2 | 專題討論  博士論文 | 30039  30048 | 1/2  12/12 | 專題討論 | 30039 | 1/2 |  |
| 小計 |  |  | 1/2 |  |  | 1/2 |  |  | 13/14 |  |  | 1/2 | 16 |
| 選修 | 傳染病之致病機制  酵素與蛋白質工程學  進階免疫學  專題研究(1)  疫苗學  期刊論文寫作與投稿  疫苗應用生物資訊學  動物細胞培養疫苗生產技術 | 40895  55119  30173  40717  20493  30546  30721  30722 | 3/3  2/2  2/2  2/2  2/2  2/2  2/2  2/2 | 進階反芻獸疫苗開發  進階豬用疫苗開發  進階魚用疫苗開發  專題研究(2)  佐劑學  生物技術與生技產業  動物疫苗製程特論  疫苗免疫學  儀器分析與操作  進階生物技術與生技產業 | 55213  30501  55202  40718  20318  20184  23384  40484  23436  23437 | 2/2  2/2  2/2  2/2  2/2  2/2  2/2  2/2  2/2  3/3 | 免疫評估技術  疫苗工程學  專題研究(3)  動物疫苗製程實習  進階禽類疫苗開發  進階寵物疫苗開發  動物用疫苗檢驗標準及技術  生物安全與防疫系統 | 40287  20492  30185  30545  23278  23279  30719  30205 | 2/2  2/2  2/2  1/2  2/2  2/2  2/2  3/3 | 產業實務  疫苗研發海外實務  專題研究(4)  生物性佐劑  疫苗蛋白質結構分析及模擬 | 30205  30500  30186  23438  30833 | 2/2  2/2  2/2  2/2  3/3 |  |
| 小計 |  | | 17/17 |  | | 21/21 |  | | 16/17 |  | | 11/11 | 65 |

備註：學生畢業總修習學分數33學分 (16學分必修課程、17學分選修課程)

International Ph.D program in Animal Vaccine Technology

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Academic Year | First Year | | | | Second Year | | | | Credit  Subtotal |
| Term | First Term | | Second Term | | First Term | | Second Term | |
| Category | subject | Credit/time | subject | Credit/time | subject | Credit/time | subject | Credit/time |
| Required Course | Seminar | 1/2 | Seminar | 1/2 | Seminar  Dissertation | 1/2  12/12 | Seminar | 1/2 |  |
| Subtotal |  | 1/2 |  | 1/2 |  | 13/14 |  | 1/2 | 16 |
| Selective Course | **Pathogenesis of Infectious Diseases**  Enzyme and Protein Engineering  **Advance Immunology**  Special Research Project (1)  **Vaccinology**  Manuscript Preparation and Submission  **Bioinformatics in Vaccine Development**  Animal Cell Culture for Vaccine Production | **3/3**  2/2  **2/2**  2/2  **2/2**  2/2  **2/2**  2/2 | **Advanced Ruminant Vaccine Development**  Advanced Porcine Vaccine Development  **Advanced Fish Vaccines Development**  Special Research Project (2)  **Adjuvants**  Biotechnology and Bioindustry  **Advance Animal Vaccine Production**  Immunology of Vaccine  **Instrumental Analysis and Operation**  Advance Biotechnology and Bioindustry | **2/2**  2/2  **2/2**  2/2  **2/2**  2/2  **2/2**  2/2  **2/2**  3/3 | **Immunoevaluation Techniques**  Vaccine Engineering  **Special Research Project (3)**  Practical in Vaccine Production  **Advanced Avian Vaccine Development**  Advanced Companion Animal Vaccine Development  **Animal Vaccine Testing Standards and Techniques**  Biosecurity and Epidemic Prevention System | **2/2**  2/2  **2/2**  1/2  **2/2**  2/2  **2/2**  3/3 | **Industry Internship**  Overseas Internship in Vaccine Research  **Special Research Project (4)**  Biological Adjuvants  **Protein Structure Analysis and Modeling for Vaccine** | **2/2**  2/2  **2/2**  2/2  **3/3/** |  |
| Subtotal |  | 17/17 |  | 21/21 |  | 16/17 |  | 11/11 | 65 |

PS：1.Students must have 33 credits for graduation (16 in required courses and 17 in electives)