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(111-114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  儀器分析與操作  疫苗應用生物資訊學  生物技術與生技產業 | 40895  55119  30173  40717  20493  30546  23436  30721  20184 | 3/3  2/2  2/2  2/2  2/2  2/2  2/2  2/2  3/3 | 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  動物疫苗製程特論  動物疫苗製程實習  疫苗免疫學  疫苗開發應用統計實務 | 55213  30501  55202  40718  20318  23384  30545  40484  30733 | 2/2  2/2  2/2  2/2  2/2  2/2  1/2  2/2  2/2 | 免疫評估技術  疫苗工程學  專題研究(3)  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  動物細胞培養疫苗生產技術 | 40287  20492  30185  23278  23279  30719  30722 | 2/2  2/2  2/2  2/2  2/2  2/2  2/2 | 產業實務  疫苗研發海外實務  專題研究(4)  生物性佐劑  生物安全與防疫系統  進階生物技術與生技產業  疫苗蛋白質結構分析及模擬 | 30205  30500  30186  23438  23435  23437  30833 | 2/2  2/2  2/2  2/2  2/2  3/3  3/3 |  |
| 小計 |  | | 20/20 |  | | 17/18 |  | | 14/14 |  | | 16/16 | 67 |

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 Topics(1)  Vaccinology  Manuscript preparation and submission  Bioinformatics in Vaccine Development  Instrumental analysis and operation  Biotechnology and Bioindustry | 3/3  2/2  2/2    2/2  2/2  2/2  2/2  2/2  3/3 | Advanced Ruminant Vaccine Development  Advanced Porcine Vaccine Development  Advanced Fish Vaccine Development  Special Topics(2)  Adjunvats  Advance Animal Vaccine Production  Practical in vaccine production  Immunology of Vaccine  The basic and practice of statistics in vaccine development | 2/2  2/2  2/2  2/2  2/2  2/2  1/2  2/2  2/2 | Immunological Evaluation Techniques  Vaccine Engineering  Special Topics(3)  Advanced Avian Vaccine Development  Advanced Companion Animal Vaccine Developmen  Standards and techniques on vaccines for veterinary use  Animal Cell Culture for Vaccine Production | 2/2  2/2  2/2  2/2  2/2  2/2  2/2 | Industry Internship  Overseas Internship in Vaccine Research  Special Topics(4)  Biosecurity and Epidemic Prevention System  Biological adjuvants  Adjuvance Biotechnology and Bioindustry  Protein structure analysis and modeling for vaccine | 2/2  2/2  2/2  2/2  2/2  3/3  3/3 |  |
| Subtotal |  | 20/20 |  | 17/18 |  | 14/14 |  | 16/16 | 67 |

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