開課班級: 博生資一A **授課老師: 彭劭于** **學分數: 2**

課程大綱:

本課程係以文獻檢討之方式，介紹近年來在家畜繁殖技術方面之進展。課程內容包括：進階發情與配種之人工控制，包括發情同期化及排卵時間之控制；進階季節性繁殖家畜之季節外配種控制，特別是在綿羊與山羊；進階家畜胚之體外生產技術，包括卵母細胞之體外成熟、體外受精及受精卵體外培養至囊胚階段；家畜精液與胚之冷凍保存技術，由傳統慢速冷凍發展至玻璃化冷凍；進階精子與胚之性別鑑定，包括flowcytometry與PCR技術之應用；進階胚操作與移置相關技術；家畜之複製，以細胞核移置及複製後之相關問題為主。

outline:

This subject provides the introduction of the progress on reproductive technology in farm animals in recent years through reference reviewing. The contents of the subject includes: Advanced artificial control of estrus and breeding, including estrus synchronization and control of ovulation timing. Control of breeding in seasonal breeders out of season particularly in sheep and goat. Advanced production of embryos in vitro including maturation and fertilization of oocytes, and culture of embryos until blastocyst stage. Advanced cryopreservation of semen and embryos, development of vitrification method out of conventional slow freezing method. Sexing of spermatozoa and embryos including the application of flowcytometry and PCR techniques. Advanced manipulation and transplantation of embryos. Cloning of farm animals mainly the nuclear transfer and associated problems after cloning.

教學型態:

課堂教學+實習 (校內、校外)

成績考核方式:

平時成績:40%
期中考:30%
期末考:30%
其它:%

本科目教學目標:

為因應我國加速畜產業轉型升級政策與精緻農業發展目標，本系旨在以核心及基礎課程結合各領域專業課程，循序漸進提升學生之執行創新研究的能力，培育具備相關進階產業轉型升級之研發成果應用與轉移能力之高階專業人才，並發展永續經營之國際化畜產業。

參考書目:

課程進度表：

週次	起訖月日	授課單元(內容)	備註
第1週	9.11~9.18	第1週：動物生殖生理概論(Overview of animal reproductive physiology) The perspective and progress of animal reproductive physiology	8日正式上課。8~12日課程加退選，轉學(系)生、復學生及延修生選課，雙主修、輔系申請，12日申辦抵免學分截止日
第2週	9.18~9.25	第2週：生命的起源與定義(The origin and definition of life) We will discuss how the life begin and elaborate the ethical and moral issues.	
第3週	9.25~10.02	第3週：精子的生成與應用(Spermatogenesis and application) The mechanism and process of sperm formation and its application are going to be instigated.	28日(日)孔子誕辰紀念日/教師節(放假),29日(一)補假
第4週	10.02~10.09	第4週：卵子的生成與應用(Oogenesis and application) The mechanism and process of ovum formation and its application are about to be debated.	29日成績優異提前畢業者提出申請截止日
第5週	10.09~10.16	第5週：精卵受精與應用(Fertilization and application) Various animals fertilization mechanisms are about to be presented.	6日(一)中秋節(放假)，10日(五)國慶日(放假)
第6週	10.16~10.23	第6週：人工生殖 (Artificial reproduction) Artificial reproduction is considerably essential to animals and human beings to solve the infertile situation and other problems. Species preservation and other researches are also involved in.	14日學生宿舍安全輔導暨複合式防災疏散演練。18日多益測驗
第7週	10.23~10.30	第7週：動物生殖生理個案討論一(Animal reproductive physiology special topics discussion I); Latest related paper discussion will be implemented in the class.	24日(五)補假，25日(六)光復暨古寧頭大捷日(放假)。
第8週	10.30~11.06	第8週：動物生殖生理個案討論二(Animal reproductive physiology special topics discussion II) Latest related paper discussion will be implemented in the class.	30日校課程委員會
第9週	11.06~11.13	第9週：期中考(Midterm exam) Midterm exam	3~9日期中考試
第10週	11.13~11.20	第10週：配子的取得與保存一(Gametes collection and preservation I) Cryo-preservation of either semen, oocytes or embryos will be illustrated. The approaches for collection and preservation are also to be reasoned.	13日教務會議,16日教師期中成績上網登錄截止日

第11週	11.20~11.27	第11週：配子的取得與保存二(Gametes collection and preservation II) Cryo-preservation of either semen, oocytes or embryos will be illustrated. The approaches for collection and preservation are also to be reasoned.	
第12週	11.27~12.04	第12週：胚胎幹細胞之應用(The application of embryonic stem cells) The approaches to obtain embryonic stem cells will be referred. Besides, ethical and moral issues of embryonic stem cells are also to be debated.	24~28體育運動週。24日校園路跑。27日運動大會夜間開幕，28日運動大會活動，29日101週年校慶活動日，照常上班
第13週	12.04~12.11	第13週：羊水,羊膜,胎盤,臍帶血幹細胞之應用一(The application of amniotic fluid, amniotic membrane, placenta, cord blood stem The topics of amniotic fluid, amniotic membrane, placenta, cord blood derived stem cells are going to be demonstrated and their applications toward regenerative medicine are about to manifested as well.	
第14週	12.11~12.18	第14週：羊水,羊膜,胎盤,臍帶血幹細胞之應用二(The application of amniotic fluid, amniotic membrane, placenta, cord blood stem The topics of amniotic fluid, amniotic membrane, placenta, cord blood derived stem cells are going to be demonstrated and their applications toward regenerative medicine are about to manifested as well.	12日申請停修課程截止日
第15週	12.18~12.25	第15週：子宮內注射技術與應用(The technique and application of in uterus transplantation) In uterus transplantation technique is utilized to many aspects inclusive of treating inherited disease or malformed baby. To figure out the significance of the approach is indispensable for studying reproductive field.	
第16週	12.25~1.01	第16週：動物生殖生理個案討論三(Animal reproductive physiology special topics discussion III) Latest related paper discussion will be implemented in the class.	22日校務會議。25日行憲紀念日(放假)
第17週	1.01~1.08	第17週：動物生殖生理個案討論四(Animal reproductive physiology special topics discussion IV) Latest related paper discussion will be implemented in the class.	1日(四)開國紀念日(放假)
第18週	1.08~1.15	第18週：期末考 Final exam	5~11日期末考試，10~11日學生退宿