DOPING ANALYSIS

Module designation	*Doping Analysis*
Semester(s) in which the module is taught	*1*
Person responsible for the module	1. Prof. Dr. rer.nat. apt. M. Yuwono, MS **(Course Coordinator)** 2. Dr. apt. Asri Darmawati, MS
Language	*Bahasa Indonesia*
Relation to curriculum	*~~Compulsory / elective / specialisation~~*
Teaching methods	*lecture, discussion, assignment*
Workload (incl. contact hours, self-study hours)	*(Estimated) Total workload:* *Contact hours (structured activities.): 90,67 hours* *Private study including independent learning activites*: *90,67 hours*
Credit points	*2 SCU / 6 ECTS*
Required and recommended prerequisites for joining the module	*NA*
Module objectives/intended learning outcomes	Students are: LO1: Able to realize excellence based on religious morals (excellence with morality), able to work together, and show a responsible attitude to work in their field of expertise independently LO2: Able to internalize the spirit of independence, struggle, and entrepreneurship LO4: Able to develop a pharmaceutical professional performance with analytical acumen in solving pharmaceutical problems and managing research in the pharmaceutical field related to national and global systems and policies, both inter and inter-disciplinary approaches. LO5: Able to access and review information through an Information and Communication Technology (ICT) system, decide on a specific subject of study, maintain the feasibility of implementing research designs, conduct research, analyze data, conclude research results comprehensively, and create strategic issues based on the study that reflect the latest updates in the field of pharmaceutical sciences, and communicate them in the media and scientific forums at the national and international level through an interdisciplinary or multidisciplinary approach in the form of a thesis or other equivalent forms. LO15: Able to plan and organize concepts and procedures for quality assurance and recommendations on pharmaceutical products, which include drugs, cosmetics, foods, and beverages as products and therapeutic goods.
Content	Doping Analysis course presents doping classification based on WADA, stages of doping sample analysis, laboratory standards, screening and confirmation methods, quality assurance of doping test results using instrumental methods
Exams and assessment formats	*Final exam or take-home written assignments*

Study and examination requirements	*The final grade in the module is composed of 25% presentation 65% take-home assignments, 10% in-class participation and soft-skills assessment. Students must have a final grade of 70% or higher to pass*
Reading list	1. *World Anti Doping Agency. http:// www.wada-ama.org* 2. *D. Thieme and P. Hemmersbach (Eds), 2010, Doping in Sports, Springer-Verlag Berlin Heidelberg.* 3. *Mario Thevis, 2010, Mass Spectrometry in Sports Drug Testing, John Wiley & Sons, New York.* 4. *S. Ahuja and M.W. Dong, 2005. Handbook of Pharmaceutical Analysis by HPLC, Elsevier, Amsterdam.* 5. *A. Miah, 2004. Genetically Modified Athletes: Biomedical Ethics, Gene Doping and Sport, Routledge Taylor and Francis group, New York.*