

Elective Course Description (2. Spring Semester)

Subject (English)	Mathematics B		Semester	Spring	Day/Slot	
科目名 (日本語)	数学 B					
Course Code		Course Numbering	SMA-MAT802E		Period	Apr. - Aug.
Instructor (Post)	TBC				Campus	
					Building	
Faculty	Faculty of Science		Credits	2	Class Room	
Class subject		Introdauction to Advances Mathematics				
Object and summary of class						
The aim of this course is to discuss various topics on modern mathematics. Each lecturer gives about 5 lectures of each topic.						
Keywords						
Goal of study						
In this course we study several topics in advanced or basics of mathematics. Students are expected to gain a perspect of modern mathematics and how it is useful to understand mathematical phenomenon.						
Contents and progress schedule of class						
<p>1. Introduction to Gröbner basis</p> <ul style="list-style-type: none"> * Review on commutative rings * Gröbner basis 1 * Gröbner basis 2 * Buchberger's algorithm * Applications <p>2. Introduction to hyperbolic geometry</p> <ul style="list-style-type: none"> * Euclidean geometry * Cosine formula * Negative curvature * Gauss-Bonnet formula on hyperbolic space <p>3. Fourier transform and its application</p> <ul style="list-style-type: none"> * Fourier transform * Point-wise convergence of Fourier transform * Application to partial differential equations 						
Preparation						
Record and evaluation method						
Textbook and references						
Self study						
In addition						