IMO2023 Number Theory Training Course

Brief Outline

My Contacts

Name: Phyoe Min Khant
Email: phyoeminkhant99.pmk@gmail.com

Timetable

Week 1	Divisibility	8.5.2023 (Mon)	Lecture 1	Euclidean and Division Algorithm
		11.5.2023 (Thur)	Recitation 1	
Week 2	Divisibility	15.5.2023 (Mon)	Lecture 2	Bezout's Identity, Fundamental Theorem of Arithmetic
		18.5.2023 (Thur)	Recitation 2	
Week 3	Modular Arithmetic	22.5.2023 (Mon)	Lecture 3	Inverses, Chinese Remainder Theorem
		25.5.2023 (Thur)	Recitation 3	
Week 4	Modular Arithmetic	29.5.2023 (Mon)	Lecture 4	Euler's Totient Theorem, Fermat's Little Theorem, Order
		1.6.2023 (Thur)	Recitation 4	
Week 5	p-adic Valuation	5.6.2023 (Mon)	Lecture 5	Definition and Basic Theorems
		8.6.2023 (Thur)	Recitation 5	
Week 6	p-adic Valuation	12.6.2023 (Mon)	Lecture 6	p-adic Valuation of Factorials, Lifting the Exponent
		15.6.2023 (Thur)	Recitation 6	
Week 7	Diophantine Equations	19.6.2023 (Mon)	Lecture 7	Bounding, The Modular Contradiction Method
		22.6.2023 (Thur)	Recitation 7	
Week 8	Problem Solving Strategies	26.6.2023 (Mon)	Lecture 8	Vieta Jumping, Wolstenholme's Theorem
		29.6.2023 (Thur)	Recitation 8	

Pdf Codes: NTL for lecture, NTR for recitation and NTP for problem set

Reference Books

- Aditya Khurmi. (2020) *Modern Olympiad Number Theory*.
- Stevens, Justin. (2013). *Olympiad Number Theory Through Challenging Problems* (3rd Ed).
- Yu Hong-Bing. (2010). *Problems of Number Theory in Mathematical Competitions*. World Scientific.
- Titu Andreescu, Dorin Andrica, Zuming Feng. (2006). *104 Number Theory Problems: From the Training of the USA IMO Team*.
- David A. Santos. (2005). *Number Theory for Mathematical Contests*.