

Speaker: Asimina Hamakiotes

Title: Elliptic curves with complex multiplication and abelian division fields

Abstract: Let K be an imaginary quadratic field, and let $O_{K,f}$ be an order in K of conductor $f \geq 1$. Let E be an elliptic curve with complex multiplication by $O_{K,f}$, such that E is defined by a model over $\mathbb{Q}(j_{K,f})$, where $j_{K,f} = j(E)$. Let $N \geq 2$ be an integer. In this talk, we will see when $\mathbb{Q}(j_{K,f}, E[N])$ is an abelian extension of $\mathbb{Q}(j_{K,f})$. Further, when the extension $\mathbb{Q}(j_{K,f}, E[N])/\mathbb{Q}(j_{K,f})$ is not abelian, we will discuss what the possible maximal abelian subextensions are.