1145-05-1539 **Kassie Archer**, **Abigail C. Bishop**, **Alexander Diaz-Lopez**, **Luis D. García Puente**, **Darren Glass** and **Joel Louwsma*** (jlouwsma@niagara.edu), Department of Mathematics, Niagara University, P.O. Box 2044, Niagara University, NY 14109. *Arithmetical structures on Dynkin graphs D_n.* Preliminary report.

An arithmetical structure on a finite graph is a pair $(\mathbf{d}, \mathbf{r})$ of vectors with positive integer entries such that $\mathbf{r}$ is primitive and $(D - A)\mathbf{r} = \mathbf{0}$, where D is the diagonal matrix with entries given by $\mathbf{d}$ and A is the adjacency matrix of the graph. We give a procedure that produces all arithmetical structures on the graph corresponding to the Dynkin diagram D_n for any n. We also prove results about the possible orders of critical groups of arithmetical structures on D_n. (Received September 23, 2018)