1060-16-84     **Bogdan Ion\*** (`bion@pitt.edu`), Department of Mathematics, University of Pittsburgh, Pittsburgh, PA 15260. *On PBW bases.*

Virtually all the proofs of the Poincare-Birkhoff-Witt theorem (and its generalizations) are of combinatorial nature, reducing one way or another to the knowledge of generators and relations for the algebras in question. I will present a PBW theorem for irreducible Hopf algebras (of which enveloping algebras of Lie algebras, in characteristic zero, or restricted Lie algebras, in positive characteristic, are examples) in arbitrary characteristic. The proof does not require any information about generators and relations and works as well for irreducible Hopf algebras in symmetrically braided categories. Furthermore, the irreducibility hypothesis may be weakened to show that any Hopf algebra with (braided) central Hopf algebra has a PBW basis over the coradical. (Received March 22, 2010)