The main goal of this talk will be to share my experiences teaching an industrial mathematics course at Winthrop University (a public comprehensive university serving approximately 5000 undergraduate and 1000 graduate students) as part of the NSF-funded PIC Math program sponsored by the MAA and SIAM. I will focus on the process of establishing contact with local industries, offer suggestions for course design to keep students engaged and manage team dynamics, and share several other tips such as acquiring data mining software. I will also discuss various outcomes (for both myself and my students) that emerged from the course as well as lessons learned for improving the course in its next iteration. (Received September 20, 2016)