Motivation is one of the crucial factors that influence the success of language learning. It plays an indispensable role in learners’ achievements. The significance of motivation in enhancing foreign language learning is undeniable. The students with higher level of motivation succeed much better in learning the language. They engage in more detailed activities, put much effort in improving all the skills related to language learning and apply them in their speciality. Another factor is learners’ attitude. The relation between motivation and learner attitudes has been considered a predominant concern in language learning research. Teaching ESP at the University is faculty-based and is intended to develop language learning skills and structural knowledge of English under the premise that interest in the content of the ESP language subject would motivate learners. Language syllabus at Kaunas University of Technology is more stimulating for learners when they are orientated towards the specialization concerned. Engineering students study engineering materials, improve writing, speaking, listening and reading skills on their speciality matter. The research outlines the results of a survey which was carried out to identify students’ motivation and attitudes towards learning ESP at Kaunas University of Technology. A questionnaire was used for data collection. The study sample consisted of 176 students of different majors at the faculties of Civil Engineering and Architecture, Computer Science and Design Technologies. The survey was carried out in the academic year 2012-2013. The findings revealed the reasons that ESP learners indicated for fostering motivation in language learning as well as confirmed the learners’ positive attitude towards learning ESP including the necessity to operate speciality terminology, capability of free communication in the world of technology where proficiency in English is mostly required for participation in today’s global community.