**Abstract** 

**Tittle:** Curve- fitting of the critical power in swimming for triathletes

**Objectives:** Comparison of curve-fitting of the critical power at swimmers and triathletes in different performance categories.

**Methods:** This thesis is based on a research. The research took place in laboratories FTVS UK and there was used the swimming simulator called Biokinetic for test measurements. Elite swimmers, triathletes and hobby triathletes participated in the tests. Sportsmen took part in 4 tests. The first test – 10 crawl strokes, the second test – 20 crawl strokes, the third test – 50 crawl strokes and the fourth test – 200 crawl strokes. The obtained data were worked out by using T-test and they were written into tables and charts in programs Excel and Word. There was used program PASW Statistics 18 for statistical processing.

**Results:** It was discovered, that there were no differences in performances in tests by using Biokinetic between swimmers and triathletes. Hobby triathletes made the same performances as elite triathletes. The biggest difference in performances was at female hobby triathletes, who were worse than female elite triathletes and female swimmers.

**Keywords:** Critical power, swimming, triathlon, Biokinetic, testing