Mathematics at the Berlin Technische Hochschule/Technische Universität

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The era of the independent academies

The Berlin Technische Hochschule was founded in 1879 through the union of two considerably older academies, the Bauakademie (Building Academy, founded in 1799) and the Gewerbeinstitut (Vocational Training Academy, founded in 1821). It later, in 1916, incorporated the former Bergakademie (Mining Academy, founded in 1770). These three academies were institutions whose teachers were not expected to do scientific research as such, and the teachers offered their training courses avocationally. It was not until 1856 that the first regular professorship of mathematics was established at the Gewerbeinstitut, a position first occupied by Karl Weierstrass (1815–1897). Only in 1895 was such a professorship created at the Bergakademie, its first occupant being Fritz Kötter (1857–1912). The Bauakademie was never provided with a professorship in mathematics.

At all three academies mathematics was regarded as an auxiliary science from the very beginning. At the Mining Academy the teachers, who lectured before only a few students, had a high turnover rate; only Daniel Chr.L. Lehmus (1780–1863) taught uninterruptedly for a long period: 1814–1852. His main appointment was to the University of Berlin (founded in 1810). Also many other teachers of the academies were associated with the university: Friedrich H.A. Wangerin (1844–1933) was with the Mining Academy; Johann Ph. Gruson (1768–1857), Peter G.L. Dirichlet (1806–1859), Ferdinand Minding (1806–1885), and Martin Ohm (1792–1872) were with the Building Academy; Karl Weierstrass (1815–1897) was with the Vocational Training Academy; and Georg Hettner (1854–1914) with the Technische Hochschule.

Lehmus was a typical Dozent (lecturer) insofar as he taught at several higher institutions, in his case at the Mining and at the Building Academies. Many of his colleagues did so: Hugo O. Hertzer (1831–1908) taught at all three academies; Ringleb, Karl Pohlke (1810–1876), Siegfried Aronhold (1819–1884) and Ernst Kossak (1839–1892) taught at the Building and the Vocational Training Academies.

The first prominent mathematics Dozent at the Mining Academy was Fritz Kötter (1857–1912), who very successfully applied mathematics to technology. In 1900, he changed his position after being appointed professor at the Technische Hochschule. His worthy successor from 1900 to 1905 became Adolf Kneser (1862–1930), who was succeeded by Eugen Jahnke (1863–1921), after the integration of the Mining Academy into the Technische Hochschule in 1916.

The development of the Building Academy and of the Vocational Training Academy was characterized by increasing demands on the students. The first eminent mathematics Dozent at the Building Academy was Dirichlet, who taught...
only part-time. At this Academy, special weight was given to descriptive geometry, which for a long time was taught by the painter Pohlke, thereafter (from 1877 to 1879) by Guido Hauck (1845–1905) (who was later three times elected Rector of the Technische Hochschule). In 1874 Julius Weingarten (1836–1910) became professor of mechanics. His publications gave ample evidence of his capability as a geometer. He was the founder of the Berlin school of classical surface theory at the Technische Hochschule/Universität, whose members included Scheffers, Hessenberg, Rembs, and the Privatdozent (private lecturer) Karl Peter Grottemeyer, who in 1958 became professor at the Freie Universität Berlin.

The Vocational Training Academy required a somewhat longer time than the Building Academy before its training courses attained a reasonably high scientific level. There the first eminent mathematics Dozent was Karl Weierstrass, who in 1856 occupied the first mathematics chair. This chair has survived to this day; in 1864 when Weierstrass was definitely appointed full professor of mathematics at the University of Berlin he was succeeded by Aronhold. Another chair of mathematics was founded in 1869 and went to Elwin B. Christoffel (1829–1900). Christoffel remained only three years in Berlin, and in 1872, E. Kossak became his successor. K. Pohlke’s successor here was his assistant H.O. Hertzer in 1865, who from 1874 onward was professor of descriptive geometry.

Mathematics at the Technische Hochschule (1879–1945)

When the Technische Hochschule was established in 1879 by uniting two academies, the Building Academy contributed one chair (Hauck) and the Vocational Training Academy three chairs (Hertzer, Aronhold, Kossak) to the four professorships of geometry and mathematics at the Technische Hochschule, which existed at the beginning. They all were assigned to the section V: General Sciences. In addition to that, there were four Privatdozenten: Scholz and Hamburger of the Building Academy, Reichel and Buka of the Vocational Training Academy.

Weingarten was professor of mechanics. When Kötter, professor at the then still independent Mining Academy, was appointed professor at the Technische Hochschule, he became professor of rational mechanics. When the Mining Academy was integrated into the Technische Hochschule in 1916, Jahnke went with his chair to the new Mining Department. No successor to him was appointed at the Technische Hochschule.

Except for the special cases mentioned, departmental terminology at the Technische Hochschule where mathematics chairs were settled changed seven times: 1879–1922 the Abteilungen V, VI or VII for General Sciences; 1922–1945 the Fakultät I for General Sciences; 1946–1970 the Fakultät for General Engineering Sciences; since 1970 the Fachbereich (Department) of Mathematics. As of 1998 mathematics is to become part of a new “Faculty for Mathematics, Physics and Chemistry.”

We can clearly distinguish between a geometrical and an analytical tradition at the Berlin Technische Hochschule. For greater clarity it seems reasonable