Geography courses have been taught at the University of North Dakota since the opening of the University in 1883. University Vice President Henry Montgomery, a professor of Natural Science, taught basic geographic concepts. By 1885, physical geography, map drawing, and meteorology courses were offered by the Geology Department. The first master's thesis in Geography, titled The Economic Geography of the Lignite Coal of North Dakota, was completed in 1920 by Julia Bertine Rue. Geology offered a minor in Physiography in 1923. That term was replaced by Geography in 1925. That same year a Geography major was added to the Geology curriculum. Geography was added to the Geology Department's name in 1932 (Department of Geology and Geography). Arthur Carl Selke wrote the first and only Ph.D. thesis in Geography at UND in 1935, titled, The Transportation System of Germany with some Application to North Dakota Conditions.

The Department of Geography was established as separate from Geology in 1942, with Vernice Margaret Aldrich as acting head. The first master's thesis in the independent Department of Geography was in 1947 (Melvin E. Kazeck, Audio-Visual Aids for the Modern High School). UND's Psi Chapter of Gamma Theta Upsilon was founded in 1948, with Dr. Bernt Lloyd Wills serving as faculty advisor.

The Institute for Remote Sensing was founded by Roland D. Mower and Gary E. Johnson in 1973. The Institute sponsored the Innovations in Land Use Management Conference, held in 1976 and 1978 in Grand Forks. Conference proceedings were published. The Institute has evolved into the Department's current Geographic Analysis and Remote Sensing Laboratory. The Department's forum series, The Forum for Contemporary Geographic Issues, was initiated in 1974 by Gary E. Johnson. It continues today. The Bernt Lloyd Wills Memorial Scholarship, which provides a stipend each semester to an outstanding undergraduate Geography major, was established in 1985 shortly after Wills' death. The UND Department of Geography sponsored the 1979 annual meeting of the Great Plains / Rocky Mountain Division of the AAG, which was held in Grand Forks, ND, and co-sponsored the 1995 annual meeting held in Rapid City, SD, with South Dakota State University. UND Geography again hosted the GPRM AAG in Grand Forks in 2008. The Department also sponsored annual meetings of the Prairie Division of the Canadian Association of Geographers in 1982, 1988, and 1994, all held in Minot, the 2000 meeting, held in Devils Lake, the 2006 meeting in Rugby, and the 2011 meeting in Devils Lake, with proceedings published for each meeting. The Department hosted the North Dakota GIS Users Conference in 2009 and 2011.

The Department has moved several times. Moves since 1970 include from Merrifield Hall to Babcock Hall (circa 1971), Babcock Hall to Gillette Hall (circa 1977), from Gillette Hall to Clifford Hall (1992), and from Clifford Hall to Ireland/O'Kelly Hall in 2004. A Graduate Certificate in Geographic Information Sciences (GISc) was implemented in Fall 2002, and an on-line version of the program was first offered in 2006. A seventh permanent faculty position was added in 2003. A full-time, non-tenure-track position was added in 2011 bringing the number of faculty to eight. UND Geography currently offers B.S., M.A., and M.S. degrees, as well as the Graduate Certificate in GISc.