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Higher Education

Higher Education in Science and Engineering

Technical Appendix

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Technical Appendix

Methodology Notes for International Degree Data

International data for first degrees and doctoral degrees for the *Indicators 2024* report “[2024] Higher Education in Science and Engineering” were retrieved from several sources, including the Organisation for Economic Co-operation and Development (OECD) and national statistical offices. These methodology notes provide details on the degree field classifications, degree-level definitions, and sources used for the international higher education data.

Degree Fields and Levels

Fields of degree used in the international section of this report are based on the most recent coding system of the **International Standard Classification of Education (ISCED)**, ISCED Fields of Education and Training 2013 (ISCED-F 2013), to facilitate international comparisons. Table SAHED-1 shows the crosswalk of science and engineering (S&E) degree fields used to map degree data from international and national data sources to the fields used in this report. Comparing degree fields across higher education systems with different degree taxonomies may require classification decisions that unavoidably result in either overcounting or undercounting of degree fields of interest. For example, degrees in political science and sociology are reported under the law field by China, but data are not published for these fields individually. Political science and sociology are typically included within social and behavioral sciences, but this report does not classify degrees awarded in law within social and behavioral sciences for China because the law field also includes traditional legal disciplines.

Levels of degree for international degree data in this report are based on the ISCED 2011 system. Doctoral degrees correspond to ISCED 2011 level 8 (doctoral degree or equivalent). First degrees may correspond to ISCED 2011 level 6 (bachelor’s degree or equivalent) or include a combination of degrees at ISCED 2011 levels 6 and 7 (master’s degree or equivalent), depending on the data source. Some countries grant bachelor’s degrees and *long first degrees*. These degrees typically take at least 5 years to complete and involve training at a level comparable to a master’s degree in the United States. Similar to bachelor’s degree programs, long first degree programs only require completion of secondary education to enroll, and completion of a program provides the first opportunity to enter the labor market with an academic credential at the tertiary level (excluding shorter-duration, occupationally focused programs).¹ The United States does not report long first degrees. Combined bachelor’s and master’s programs in the United States may provide roughly similar educational training to long first degrees, but there are very few such programs, and institutions award both degrees to these joint program graduates.

Where data are available, national totals for first degrees presented in the section International Comparisons of S&E Higher Education equal the sum of first degrees at level 6 (bachelor’s degree or equivalent) and long first degrees at level 7 (master’s degree or equivalent). If data were unavailable for first degrees at level 6, the sum of all level 6 degrees and level 7 long first degrees was used. For countries such as the United States that do not report data specifically for first degrees, first degree totals are bachelor’s degrees.

OECD

Unless otherwise specified, international degree data in the report were retrieved from the OECD Education at a Glance Database, accessed through **OECD.Stat**. The data reported by OECD come from an annual collection of education data conducted jointly by the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics (UIS), OECD, and Eurostat (UOE data collection). OECD degree data in this report use current ISCED codes (ISCED 2011, levels of education; ISCED-F 2013, fields of education).

China

Degree award data for China through 2015 come from the *China Statistical Yearbook* of the National Bureau of Statistics of China and remain unchanged from *Indicators 2022*. Newer years of data come from annual tables published by the Chinese **Ministry of Education**. Data for first degrees were retrieved from the table “Number of Regular Students for Normal Courses in HEIs (Higher Education Institutions) by Discipline” and data for doctorates were retrieved from the table “Number of Postgraduate Students by Academic Field (Total).”

India

Degree award data for India were retrieved from the India Department of Higher Education’s *All India Survey on Higher Education*. Data for India in this report will not match data reported in *Indicators 2020*, which were retrieved from OECD when available. OECD has since ceased publication of higher education degree data for India; thus, a national-level data source was required. The number of degrees for India also varies slightly from the totals reported in *Indicators 2022* due to a revision of the S&E fields crosswalk (Table SAHED-1) since the last report.

Notes

1 For a detailed discussion on classifying educational programs to ISCED levels, see OECD. 2018. *OECD Handbook for Internationally Comparative Education Statistics 2018: Concepts, Standards, Definitions and Classifications*. Paris, France: OECD Publishing. Available at <https://doi.org/10.1787/9789264304444-en>. Accessed 6 November 2022.